



THE WAMCATS STORY

Page 8



SPARKS JOURNAL

★ ★ ★ ★ SOCIETY OF WIRELESS PIONEERS, INC. ★ ★ ★ ★

LEGENDS OF THE WIRELESS PIONEERS

RECORDING THE EARLY HISTORY & DEVELOPMENT OF THE WIRELESS

VOLUME 7, NO. 4

JUNE 21 1985

THE WAMCATS EDITION



THE WESTERN ALASKA MILITARY COMMUNICATION & TELEGRAPH SYSTEM

BRINGING COMMUNICATIONS TO A FRIGID WILDERNESS

A HERCULEAN ACHIEVEMENT BY U.S. ARMY SIGNAL CORPS

A.C.S.

HISTORY MADE HERE!

A.C.S. STATION

BY ED MARRINER



US Army Signal Station
Nome, Alaska, 1912

How did it all start? Historically, it was the first communications system on all of the West Coast of America. During the various Alaskan gold rushes, starting in 1898, towns and camps mushroomed overnight, with plenty of tin horn gamblers and other characters (as described in the poems of Robert W. Service) wandering from place to place. By 1900, better communications than messages by boat or dog teams became a necessity.

In 1900 Congress gave the U.S. Army Signal Corps money to improve wireless communication and charged them with the responsibility for a cable line to Alaska and the interior. This cable line was constructed under great difficulty for the poles had to be set into permanently frozen ground. This was the first of many factors which launched the Army into wireless communications.

In 1903 the U. S. Army had strung wires to St. Michaels, Alaska, and was faced with the problem of making it to Nome. This meant the choice of going around Norton Sound with a pole line under the worst of primitive conditions or laying a cable which would be carried away by ice each year.

The Signal Corps, by now, had used wireless telegraphy and decided that the last link between the stations at Nome and St. Michaels was to be a wireless one. The entire system consisted of 107 miles via wireless, followed up by 3883 miles of cable to Seattle. This same year, 1903, Dr. Lee DeForest experimented and exchanged satisfactory communication between Fort Safety, Alaska, and these stations which was the final report of the project which started back in 1899.

Leading up to the Alaskan Wireless Network was a report by the Chief Signal Officer who, in 1899, announced that the Signal Corps had devised a system of wireless telegraphy. This was the first publicly operated network in America. Improved in detail, it worked successfully over limited ranges between the harbor fortifications for which it was planned. Recognizing, however, that rapid advances were sure to be made by civilian experts, the Chief Signal Officer decided to adhere in this matter to his general policy. This meant that experimental work would be carried out by the Signal Corps only under those conditions where there wasn't any easy recourse to the commercial and industrial establishments of the United States.

Owing to repeated failure of several wireless telegraph companies to furnish a reliable and satisfactory system of wireless telegraphy in Alaska over a distance of 100 miles, the Chief Signal Officer decided in 1903 to have all existing systems examined with reference to their practical qualities. He decided to obtain by elimination, substitution or invention some system for Army use which would result in the reliable and successful transmission of messages.

"Get The Message Through"



Map showing the wireless circuit between Nome and Fort St. Michael, Alaska, a distance of 100 miles. This circuit was put into operation by the U.S. Signal Corps in 1903 to replace the cable which was washed out by ice every year.

Owing to repeated failure of several wireless telegraph companies to furnish a reliable and satisfactory system of wireless telegraphy in Alaska over a distance of 100 miles, the Chief Signal Officer decided in 1903 to have all existing systems examined with reference to their practical qualities. He decided to obtain by elimination, substitution or invention some system for Army use which would result in the reliable and successful transmission of messages.

The farsightedness of the Chief Signal Officer had already accumulated information and instruments which facilitated the solution of the problem. In addition to the systematic collection of all published data on wireless telegraphy, no efforts had been spared to supplement these by obtaining information from various inventors and experimenters. In addition,

(Continued on Page 8)



WAMCATS

Who? What?

When? Where?

At the turn of the century the Alaskan gold rush was in full swing. Army forts had been established to look after the gold seekers, and a reliable communications system was needed. A wireless communications system was established, later to be called the Western Alaska Military Communication and Telegraph System, which eventually employed many radio amateurs who as civilians became speed operators on one of the country's fastest CW nets. They were called WAMCATS.



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Founded 1968 by William A. Brennan

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Early Days of The Wireless



A.C.S. - Wamcats Edition

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39. The S.S. NORTHWESTERN - A tough ship in dangerous waters Author - Dexter S. Bartlet (Reprinted from Seattle Times 1962
40. "The Kalamazoo" by L.M. Perks.

WILL A SECRETARY GO TO HEAVEN?

If a Secretary writes a letter—it's too long!
If he sends a postcard—it's too short
If he doesn't send a notice—he is lazy!
If he attends a committee meeting—he is butting in!
If he stays away—he is a shirker!
If he duns a member for dues—he is insulting!
If he fails to collect dues—he is slipping
If he asks for advice—he is incompetent!
If he doesn't—he is bull-headed
If he writes his reports complete—they are too long!
If he condenses them—they are incomplete!
If he talks on a subject—he is trying to run things!
If he remains quiet—he has lost interest in the meetings!
ASHES TO ASHES. DUST TO DUST. IF OTHERS WON'T DO IT, THE SECRETARY MUST.

S.O.W.P.

ELECTION CANDIDATES

Election of Officers and Board of Governors for the period 1985-1988 include the following members as recommended by the Nominating Committee. This subject to election results and acceptance by listed nominees, most of whom have indicated their acceptances.

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Ballots are scheduled for mailing to all members in early Aug. - results will be furnished all members.



S • O • W • P



SOCIETY OF WIRELESS PIONEERS INC.

Our Wavelength — Preserving Communications History

THE FOUNDER'S PAGE

A Salute to the U.S. Signal Corps and the State of Alaska



ALASKA'S FLAG

Eight stars of gold on a field of blue—
Alaska's flag. May it mean to you
The blue of the sea, the evening sky,
The mountain lakes, the flow'rs nearby;
The gold of the early sourdough's dreams,
The precious gold of the hills and streams:
The brilliant stars in the northern sky,
The "Bear"—the "Dipper"—and, shining high,
The great North Star with its steady light,
Over land and sea a beacon bright.
Alaska's flag—to Alaskans dear,
The simple flag of a last frontier.

—Marie Drake

THE STORY OF ALASKA'S FLAG

In 1926 The American Legion, Department of Alaska, conducted a contest in the Alaska public schools for designing a flag for Alaska.

The design of Benny Benson, a 13-year-old orphaned schoolboy of the Jesse Lee Mission Home at Seward, was chosen winner. Accompanying his design, he wrote:

"The blue field is for the Alaska sky and the forget-me-not, an Alaska flower. The North Star is for the future State of Alaska, the most northerly of the Union. The Dipper is for the Great Bear—symbolizing strength."

The poem "Alaska's Flag" was written by Marie Drake and set to music by Elinor Dusenbury. In 1955, it was designated Alaska's Official Song.

GREAT SEAL OF THE STATE OF ALASKA

In 1884 Congress provided for a civil government for Alaska, and the first governor, "on his own motion," designed and had made a seal for the District of Alaska. The seal was used until 1910, when Gov. Walter E. Clark said the seal placed too much emphasis on icebergs, northern lights, and native people. He had a draftsman in Juneau draw a rough draft of a new seal, which incorporated the original features plus symbols for mining, agriculture, fisheries, fur seal rookeries and a railroad.

The design was approved by the Acting Attorney General of the United States. A "more refined" drawing was made by an unknown person in the Department of the Interior, and the new seal was ready for use early in 1911. After Alaska was changed from a District to a Territory in 1912, the new designation was substituted the next year. Seal is 2 1/8 inches in diameter.

The Constitution for the State of Alaska provides that the Territorial Seal shall be the Seal for the State of Alaska, with the word "Territory" changed to that of "State."



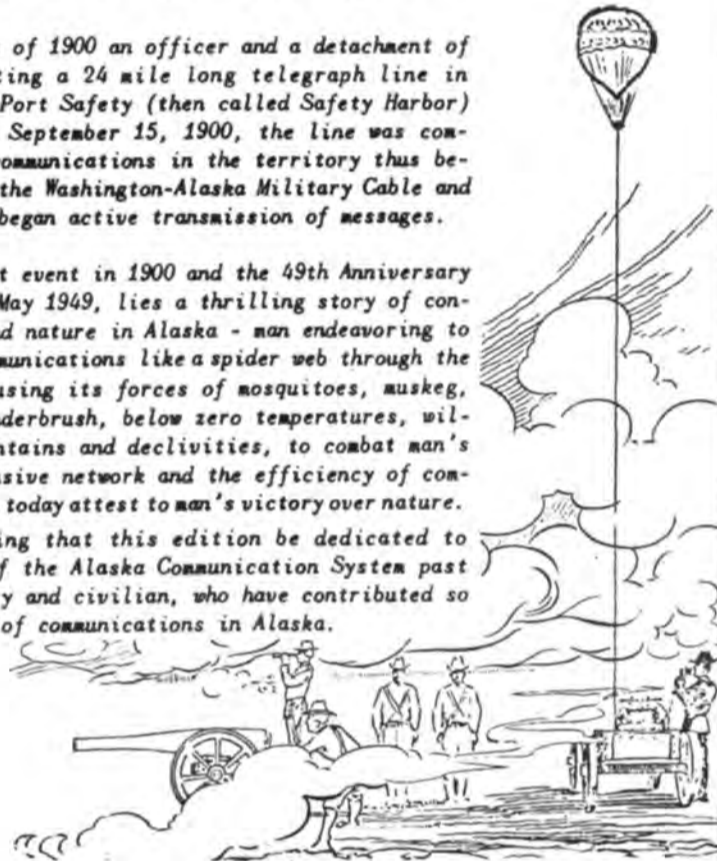
DEDICATION

"Get The Message Through!"

In July or August of 1900 an officer and a detachment of men began constructing a 24 mile long telegraph line in Alaska from Nome to Port Safety (then called Safety Harbor) via Fort Davis. On September 15, 1900, the line was completed, electrical communications in the territory thus became a reality, and the Washington-Alaska Military Cable and Telegraph (WAMCATS) began active transmission of messages.

Between this great event in 1900 and the 49th Anniversary of the System on 26 May 1949, lies a thrilling story of conflict between man and nature in Alaska - man endeavoring to lay his lines of communications like a spider web through the territory - nature using its forces of mosquitoes, muskeg, ice slopes, thick underbrush, below zero temperatures, williwaws, floods, mountains and declivities, to combat man's progress. The extensive network and the efficiency of communications in Alaska today attest to man's victory over nature.

It is only fitting that this edition be dedicated to those individuals of the Alaska Communication System past and present, military and civilian, who have contributed so much to the history of communications in Alaska.



Exit Laughing



This caricature of 'Ye Ed' saw the light of day some 40 years ago when pseudo-artist Fouse Alman published it in the "V-Regionnaire" of the 5th CAA Region at Kansas City at the time of his transfer to the Great Lakes Region of Chief of the Communications Division.

This work of art did not receive any awards from the 'Beaux-Arts' group although the U.S. Navy was reported to have awarded it a 'Two Star' rating for the "best propositution of art form" their panel had observed in a long period of time. They thought the flim-flam and spoofery treatment lacked the creative fine touch of a Master and concluded 'posterity' would never miss it if not republished. "Ye Ed" while not thrilled, decided to buck the odds to insure Alman's creation did ... "live on" - at least for a few more weeks. Consider this historically as a bit of 'levity with the longevity of an Octogenarian.

[Who says an Editor has no fun ?]

We do not count
a man's years
until he has
nothing else to count.

Ralph Waldo Emerson

PAUL KOTERBA STORY



"Memories of an old Aircraft Spark Gapper"

AS RELATED TO ROBERT F. BOWKER-860-P Lt.Col. USAF-Ret.

Foreword by Paul Koterba

Dear Bill;

Your articles in the SOWP Issue by Mr. Dickow, Dr. DeForest, was very interesting.

Being an old time aviation Spark-Gapper, I noted, that little was said about the early equipment and radio men in their experience in the early days of aviation after 1920 or so.

My very Dear Friend and shipmate Colonel R. F. Bowker USAF (Ret) K6QT who was the head of the Communication Section MATS with whom I had the privilege to serve under, has made suggestions that I write up something on the early days of aviation radio. Col. Bowker, in my estimation, ranked as the most outstanding Electronic and Communication Engineers in the Air Force, will review this presentation and may or may not determine that it is important.

So I am taking the liberty of presenting you with some of the happiest moments and experiences. As the song in the "Old Oaken Bucket" goes "How dear to my heart are the scenes of my childhood", I hold the same feeling for my early aviation experiences.

Being in the middle '80's, I will endeavor to relate some of those happy memories to the best of my knowledge, so here goes.



MEMORIES OF AN OLD "SPARK GAPPER"

After graduating from the Naval Radio School, Great Lakes Ill. in 1921, I was fortunate in that I was amongst 6 radio grads to be selected for further training in aviation radio at the school located at Pensacola, Fla.

Arriving there in January, 1922, we reported in to the O in C of the Radio School, this school was established by Lt. H. C. Rodd, USN, who was the radio operator on the Atlantic crossing of the NC-4 Plane.

The senior Radioman at the school was a MN1/c, L. A. Hyland, whom later was an assistant engineer at NRL Bellevue, and was the inventor of the shielded spark plug, further was a vice president in Bendix organization and later Chairman of Hughes Aircraft Corpn. He was strict and demanding, but fair, so I got along very well with him.

At the school, we were required to know each and every part of all aircraft radio equipment. We were taught and required to rewind Audio and Radio receiver transformers. We had to qualify in rewinding armatures used in aircraft xtrs, we had to qualify as signalmen using Semaphore Flags, and we were taught the art



First monoplane in the U.S. Navy [Martin VO-5] Hampton Roads 1925. Note generator on top fuselage. (Koterba Photo)



NC-4 Plane at Pensacola, Florida - 1024
[Paul Koterba Photograph]

of casting Homing Pigeons from a flying aircraft. We had to qualify in taking radio bearings in flight and any other function applying to communication.

There also was a ground school radio class for student pilots. They had to attain a certain proficiency in receiving code weekly, until they attained 20 WPM. Some of the students had a hard time in so doing.

The Chief in charge of the ground school came up with a brilliant idea that by sending code to the students while they slept would enable their subconscious minds to improve their code reception, but it did little good, Ha Ha.

Now to get to the early equipment used in aviation. There was an SE 1270 Quenched Gap Xmts used in the HS-2 Seaplanes, together with a 3 tube regenerative receiver Model SE 1414. An alternator mounted on the top wing. A fixed antenna consisting of 2 wires mounted between the skid fins on top of the wing, a trailing antenna and reel mounted in the radio compartment which was in the nose of the plane, the poor Radioman used to get a good wetting at times.

A Model SE 1300 rotary gap xmttr replaced the SE 1270 equipment. All the components, Alternator, Transformer, Condensers, rotary spark gap, inductance coils, were contained in a case resembling a 12" shell, with a lean micarta out from the tail section from the Xmttr to the radio cockpit of the plane.

(Continued Next Page)

LCDR Koterba Completes 30 Years Naval Service; Has Colorful Career

LCDR Paul J. Koterba, Production Superintendent for O&R, marked his 30th year in the Navy last Wednesday, 28 March. Enlisting at the age of 17, he first came to Pensacola in 1921 where he started working with the old "H" boats of VS-1 Scouting Force. In 1927 Mr. Koterba received his commission as a radio electrician here and started instructing aviation officers in radio receiving, operation of aircraft radio equipment, and gunnery and spotting exercises.

LCDR Koterba has instructed many of the present active and retired high ranking officers and has won the admiration of those whom he worked for and those who have served under him. He takes great pride in the fact that in his whole Naval career he has not had a single disciplinary mark on his record.

Mr. Koterba believes that there is no such thing as a "tough skipper". His recipe for getting along in the Navy is to do your duty wholeheartedly, putting everything you have into it and no skipper will seem tough on you.

The advice he gives to youngsters in the Navy is to love honor and respect the Navy and our Country. He says "Carry out your orders with a snappy salute and a cheerful "Aye, Aye"...never forgetting that many a shipmate gave his all that those of us who were more fortunate might enjoy liberty, home and life."

He is married to the former Miss Trylus Johnson, a Pensacola girl, and



LCDR KOTERBA, USN

has one son, James Clifton, 18, who is now attending the University of Hawaii.

AVIATION

Pounding Brass in the 'Friendly Skies' of The Early 1920's

The signals from this Xmtr were not too desirable as it was not synchronized and would wobble and waver, so it was replaced by the model SE 1310 model which was similar to the SE 1300, but the spark gap was adjustable for synchronism. These sets were installed on the larger twin engine Model H-12, H-16 and F-51 Planes.

The radio operators station was located in the rear end of the hull. The compartment containing a large Bakelite Panel on which was mounted the control box, Antenna Variometer, (Loading Coil), a hotwire radiation ammeter, and plugs for the selection of antennas. The antenna reels and a rotating radio compass loop was aft of the operators table. A flame proof Xmtr key was mounted on the table and a Magnavox Interphone outlet also decorated the equipment.

There also was a large 6 foot kite, an Aldis Signal Lamp, and Very Pistol for distress signalling contained in the compartment. The Receiver was a SE950 Model with a 6 tube amplifier unit. The Receiver was mounted on Bungee Rubber strips to overcome vibration. There also in addition, was a can of shellac and a bundle of cotton which came in handy, stopping leaks in the Liberty Engines water cooling system. Many a times, it would be necessary to climb out on to the motor to patch up a leak around the spark plug area. Water was gold as in case of a forced landing caused by water leakage. We couldn't use salt water as coolant.

The SE 1310 Set was later replaced by a model SE 1370 model. It had 3 means of communication, CW, MCY, and Voice. We hardly ever used voice, as the carbon in the mikes would compress and dampness would make them inoperative. The set (Pic# 5) was contained in a case $1\frac{1}{2} \times 1\frac{1}{2} \times 1-3/4$ cabinet. We had considerable trouble with this set as the wiring inside the Xmtr was closely grouped and insulated with spaghetti type of Mica insulation. Dampness would cause shorts, etc. in set. Also, on the Buzzer Modulated position, the contacts on the buzzer would corrode and malfunction would occur.

The alternator was also relocated into the VEE portion of the engine rear part, reasons that in case of forced landings, there would be sufficient pressure created by the remaining engine, to turn on the radio generators prop, causing rotation. Also, the wooden props were replaced by a single blade, self regulating fan head. The blade would vary in pitch as the air pressure varied.

We had lots of trouble with this prop, causing injury to plane's crew by coming into contact while rotating, so the brilliant idea of painting the tip of the blade with red paint occurred. This was a sad mistake, as by painting the tip of the blade, the balance of the prop was destroyed, causing the alternators' shaft to crystalize and break off.

So it was necessary to install a prop guard which worked out fairly well.

Later on, the SE 1370 Xmtr was replaced with a SE 1380 model which was a self-rectifying outfit, two 50 Watt tubes in push pull, utilizing the high point of the A.C. current, very efficient. This type Xmtr was used on the PN-7 Hawaiian Flight.

Later this equipment was replaced by model GO Xmtr with the introduction of short wave transmission. The unit comprised of 3 sections with the short wave portion mounted on one side. The Power unit was in the middle and the long wave Xmtr on the other side. The operators had to be indoctrinated in the tuning procedure of the shortwave Xmtr, as on the long wave method, the output was tuned to maximum antenna current. On the short wave set, the grid dips and plate-current max had to be used. It took some time to get the operators used to this method.

The receivers were also replaced with a model RU receiver, manufactured by the Boonton Radio Corporation, a Mr. Hansen was the engineer who designed this set. It had many plug-in coils for various wave lengths, but it was usable.

A manual ADF also was installed on the top wing for direction finder purposes.



First Hospital Plane, NAS Hampton Roads, VA - 1925.. Note radio-generator with self regulating props with prop-guard rear strut of starboard engine. Paul Koterba standing back of prop.



Vought Scout Plane flying near Manila, P.I. 1931. Note generator mounted on top wing



Patient being unloaded from Hospital Plane (Chidbirth) Hampton Roads - 1925. Brought in from Coast Guard Station in North Carolina.



Paul Koterba and other crew members, enroute to Coco Solo on Ferrying Flight.. Koterba at far right.. L/R: Unidentified; Perkins; McCauley - 2nd pilot, Mack Jones-Pilot and Paul Koterba. Picture taken in 1923 at stop in Virgin Islands.

Paul Koterba - Pioneer

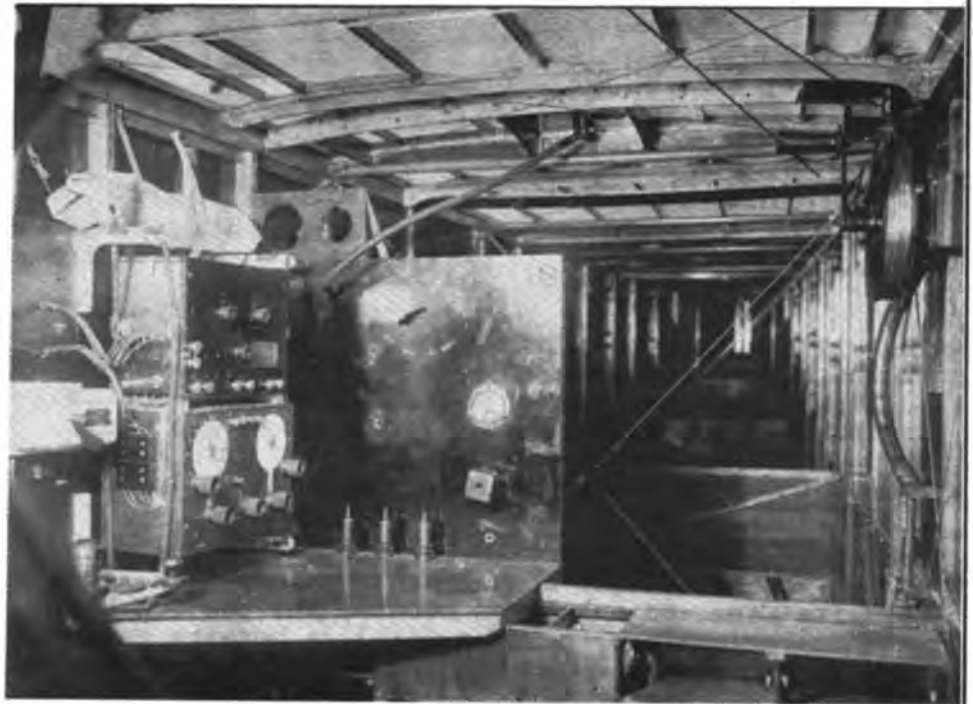
The GF-RU type equipment was also installed on single engine planes for the pilots use. The radiomen had model GP and GP-1 Xmtrs, using interchangeable plug-in units. This equipment was carried on, into the time of WW-2.

I've related most of the information on equipment. I would like to relate the experiences of the radio men. He had to be compatible with the remainder plane crew. He had to be a competent Signal Man, He was assigned certain duties when changing engines, and had to know how to align the planes wooden propeller, using a swab handle poked between the forward struts. He had a certain section of the plane to keep clean, had to be familiar with the gas system, as the gas feed was gravity fed, and had to assist in cranking the engine when starting. Losing tools overboard was a crime, so one had to be extremely careful not to drop a tool while working on the engine. He had to be familiar with taking on and assisting in fueling the plane. He had to be a proficient aerial gunner firing Lewis Machine guns from either side of the radio cockpit. In all and all, He had to be a jack of all trades.

While stationed at NAS Hampton Roads, I was assigned to what at that time, was the first medical evacuation plane. We serviced the Atlantic Coast Carolinas, etc. Am enclosing some photos which shows a woman in childbirth being unloaded after being picked up at a coast guard station off the North Carolina area.

This is about all I am writing about experiences: had so many, it would fill a book, but I just gave the highlights of my experiences.

I hope that the above may be of some interest to you, but if not, just discard same. All for your approval.



Radio Equipment in F5L Seaplane - 1922. 1310 Sparks Transmitter. Front view showing Antenna and Instrument panels. Paul Koterba picture.



Aircraft Operator's Spart-Gappers Squadron - VS-1 Scouting Force. Taken at NAF, Philadelphia 1923. L/T Rear: F.Molek, H.D. Cromer, W.R. Daniel, W. Williamson, H.L. Johnson. CENTER: A.E.J. Dionne, C.Evans, Brummet, W. Miller, Broughton. FRONT: Odom, N.M. Cooke, Paul Thorum. [Know any of them ?]



Aero Radio School, N.A.S. Pensacola - 1922, Building 105. Paul Koterba and Stanley Kocan testing SE 1310 Xmtr after overhaul at dustabt right and Sam Dormany rewinding armature in foreground



Aero-Radio School, Naval Air Station, Pensacola, Fla. 1922 Bldg. 105. Students at work and in class. Many of the Radio Fly-Boys graduated from this school.



LEWIS M. CLEMENT

Operating Experiences of a Pioneer

BACKGROUND EXPERIENCES OF THE
LEWIS M. CLEMENT WIRELESS
STATIONS FROM 1905/1969
"BD" "SAG" "6XC" "WA3CKE" "K3AA"

The San Francisco "CALL" around the turn of the century (1898-1901) publicized the work of Marconi and others and attempted to report by wireless the arrival of the U.S. transports returning Spanish-American war veterans from the Orient. They arranged to have a spark transmitter installed on the San Francisco lightship and a receiver at the Cliff House. Apparently this was not very successful and failed to replace the "LOOK OUT" on Sutro Heights overlooking the Golden Gate at San Francisco.

1905--My grandfather, Captain E.M. Freeman, then Pilot Commissioner and Captain Mudgett, a pilot, knew about these experiments and Fred Mudgett became interested and built a 1 KW AC operated transmitter and a two slide tuner with a carbon block needle detector (microphone detector) and installed it in the Mudgett home overlooking the bay in Alameda. He used to listen to the Pacific Wireless Telegraph stations, "OD" and "SF", in Oakland and San Francisco and the Navy stations at Mare Island, Goat Island and the Farallon Island station, twenty miles or so off San Francisco.

He also communicated with Henry Heim "H H" who had a similar set in Alameda over his father's candy store on Park Street.

Early in 1905 my grandfather introduced me to Fred and I saw his station in Alameda. Of course I became interested and built me a similar set at my home at 1013 - 12th Street in Oakland.

I used to hear "OD", "SF", "FM", "H H", and the Navy stations too. The Pacific Wireless Company used American Morse and we used to visit Mr. Duncan, who was the operator at "SF".

Arnold Folte "AG" lived two blocks away and we practiced every day after school, so became good American Morse and Continental operators.

1906--Bought a 2 inch spark coil and used to work with "AG" and F. Rieber "AU". Had a forty foot 4x4 mast in the back yard and a 24 foot 2x2 mast on the roof of my house. The day of the big earthquake, April 18, 1906, everyone lost their brick chimneys during the quake but my antenna withstood the shake.

The Pacific Wireless company two 300 foot wooden towers on Mt. Tamalpais were totally wrecked by the earthquake and so ended their try to make a San Francisco to Honolulu wireless test.

1907--The Electrolytic detector came into use and of course I had to have one. This opened Pandora's box and many stations between Canada and Mexico livened up the scene.

Then the ships and stations began to operate. "PH" San Francisco, "PD" Friday Harbor, Washington, "PJ" San Pedro (LA), Monterey "PQ". Both the United Wireless and Massie Wireless stations as well as their ships were very active.

I remember in 1907 when the SS PRESIDENT came around the Horn and arrived in San Francisco with Arthur A. Isbell as operator. The Massie Company took over the 20 KW station at the beach, near Sutro Heights. The two 250 foot white masts were landmarks for years.

Several of us amateurs, including F. Rieber, L. Chilcote, K.V. Laird, C. B. Harris, J. W. Muir, Cyril Lotz and myself, formed the BAY COUNTIES WIRELESS TELEGRAPH ASSOCIATION in 1907. Entrance requirements included ability to copy 20 words per minute and pass a technical test. We also issued station licenses beginning in 1908. Mine was number 3, signed by L. R. Chilcote as the president and C. B. Harris as Secretary.

1908--The Bay Counties Wireless Club reported the U.C. - Stanford big game from a battery operated transmitter under the north bleachers to the Rieber station "AU" at 15 Canyon Road in Berkeley. We had receivers located in Alameda and Palo Alto. The reporting was a success but we were not paid.

After Lawrence Malarin and Arthur Isbell made the first contact between San Francisco "PH" and Honolulu "HU" in October 1908 we used to hear Honolulu and the ships one night out from the Hawaiian Islands on their way to San Francisco.

In 1908 Admiral Bob Evans' great White Fleet visited San Francisco on its round the world cruise. We first heard them while they were in Magdalena Bay, lower California, some 1500 miles away. The fleet was equipped with De Forest arc wireless telephones. Mr. O. C. Brill was the De Forest engineer who travelled with the fleet. In 1920 I met him when he was with the A.T. & T. Company and he lived across the hall in the same apartment building at 6201 Broadway, New York City. (Believe he then was with the Occidental & Oriental Wireless Company of San Francisco and his boss was a Mr. George Jessup.)

During the Great White fleet's visit to San Francisco the Bay Counties Wireless group through F. Rieber's station "AU" gave the fleet free 24 hour message service. They operated the De Forest arc wireless telephone and imagine my surprise when I heard a voice say, "This is the U.S.S. CONNECTICUT "D C". They had two letter calls.

About this time carborundum was being used for detectors and the Carborundum Company on Mission Street in San Francisco used to give us a piece six inches in diameter and several inches long for free. Soon they stopped this and charged fifty cents for a small bit. Later, Galena, Silicon, Iron Pyrites and the Pickard Perikon detectors made their debut.

We moved to a home on Wayne Avenue in East Oakland and for the first time had electricity for lighting. A 50 amp circuit was installed for my wireless transmitter located in the attic. The antenna consisted of a 90 foot mast in the back yard and a 30 foot 4x4 supported by an oak tree some 225 feet away. The ground was connected to all the wire fences in the neighborhood, surrounding the chicken coops.

The transmitter was a 3 KW rotary and a straight gap. The antenna current was 40 amps.

In the period 1910-1914 the Bay Counties group used to operate what we now call a "net" on Friday morning in the winter 5 AM to 7 AM. All used three letter calls, such as:

SNT	F. Moore, Walla Walla, Wash.
SKH	N.M. Tate, Vacaville, Calif.
SAU	Haraden Pratt, San Francisco
SAZ	F. Rieber, Berkeley
SEW	Cyril Lotz, San Jose
SDF	Ray Newby, San Jose
SAQ	De Los Martin, Santa Cruz
SFK	L. Chilcote, Berkeley
SHC	Ford King, San Francisco
SAL	Howard Cookson, Palo Alto
SAG	K. V. Laird, Berkeley
	Lewis Clement, Oakland

One of the fellows had message blanks printed headed "PACIFIC RADIO COMPANY" which we used.

During our college days, to 1914, we built and used a 5 KW 500 cycle transmitter. We used to hear German stations on Yap, also Apia, Samoa. Our call then was 6XB. We provided NAA time signals when interference from the San Francisco Poulsen arc station permitted to the astronomy department of the University of California at Berkeley so they could determine longitude accurately.

After graduation I went to high-power Marconi station KIE at Hawaii and Haraden Pratt went to the Marconi station at Bolinas. "KET" and our amateur activities ended temporarily.

In 1964 my grandson, Bruce Cooper "K6WGJ" and son-in-law, Don T. Cooper "K3WGK" made me get a license and return to the air as "WA3CKE". Later I received the fine call "K3AA" from the Federal Communications Commission. Since that time I have been on the air on 6-10-15-20-40 and 80 meter bands and have enjoyed many worldwide contacts.

It seems remarkable that with today's 150 watt transmitters and small antenna, under good conditions, worldwide contacts are possible. So different from the days of holding one's breath and using indelible pencils so that the small noise might not interfere with the weak signal. Sound familiar? And what a change the use of tubes and solid state devices have wrought.

With my sincere 73's,

Lewis M. Clement K3AA
Doylestown, Pennsylvania

Note to Editor Bill Breniman:

Was sure glad to receive the above story from Lew Clement and pass it on to you for our P.O.C.

Lew was once wireless operator on the SS SPOKANE "GE". That was in 1911. He was on the SPOKANE when she went ashore in Seymour Narrows.

While the following did not belong to the Bay Counties Wireless Club, we shared in their activities in communicating with them on our spark coil amateur sets, 1907/1912.

A. C. S.

first wireless in Alaska

Get The Message Through!

(Continued from Page 1)



The frigid weather and frozen tundra were overcome to place a commercial wireless system in operation in 1903



NOME, ALASKA

The farsightedness of the Chief Signal Officer had already accumulated information and instruments which facilitated the solution of the problem. In addition to the systematic collection of all published data on wireless telegraphy, no efforts had been spared to supplement these by obtaining information from various inventors and experimenters. In addition, Capt. Wildman, who began his work by testing the capacity and efficiency of the Braun-Halske wireless transmitter, a duplicate of the plant which operated successfully during the German maneuvers. While this transmitter was not unsuccessful, its maximum capacity for transmission of messages over 63 miles was not entirely satisfactory.

In addition to determining the best type of field wireless apparatus suited to the Army, he was particularly charged with the setting up of a permanent wireless plant which should be able to work successfully over distances exceeding 100 miles.

The chosen field of operation was between Fort Wright, Fisher Island, and Fort Schuyler, New York, 97 miles apart, of which 20 miles was across land. The use of these forts was a factor in the national defense as it established a wireless system over which, in times of great disturbance, a message could be quickly exchanged between the outlying defenses of New York.

With these ends in view, experiments were carried on under Capt. Wildman's personal supervision during the latter part of the year with instruments purchased from the Lodge-Muirhead Wireless Telegraph Company of Great Britain, the Brau-Siemans-Halske Wireless Telegraph Company of Germany, the National Electric Signal Company of Washington, D.C., and from the DeForest Wireless Telegraph Company of New York.

In addition to the instruments furnished by the above companies, experimental apparatus was purchased by the Chief Signal Officer from time to time. Comparative tests were also made between all receivers, responders and coherers on the market, as well as with many different types of special equipment.

Notwithstanding the popular idea that wireless telegraphy over great distances was an accomplished commercial fact, none of the systems investigated proved satisfactory for Army use. (Have times changed?) Wireless telegraph systems seemed to have been developed by their inventors in the laboratory for their own use rather than to electrical and mechanical standards in which a reliable piece of equipment could be placed on the commercial market.

After an investigation of the existing systems, Capt. Wildman formulated, with the approval of the Chief Signal Officer, the following changes as being necessary for practical military uses:

1. Eliminate the necessity for an absolute electrical ground.
2. Construct all parts of the apparatus so that in case of the failure of any part, that part can be replaced without elaborate machinery by intelligent unskilled labor. Even in those days they had trouble getting technicians.
3. Replace all adjustments which require a knowledge of mathematics, or experience in manipulation by lettered dials or definite switch positions so that highly skilled operators would be unnecessary.
4. Reduce the necessary height of the antenna wires.
5. Produce a receiver which would not only receive the message intended for it, but which could, by adjustment, also receive any electromagnetic wave.
6. Eliminate disturbances due to atmospheric or static electricity.
7. Avoid, as far as practicable, all dangerous high-potential currents at points where there was a possibility of danger to employees.
8. Provide devices which would protect the instruments and machinery from destructive potentials.
9. Avoid, as far as possible, the use of patented devices and the consequent payment of large royalties.
10. Devise a system which could be easily transported in time of war and which would be capable of transmitting messages under all climatic and topographical conditions.

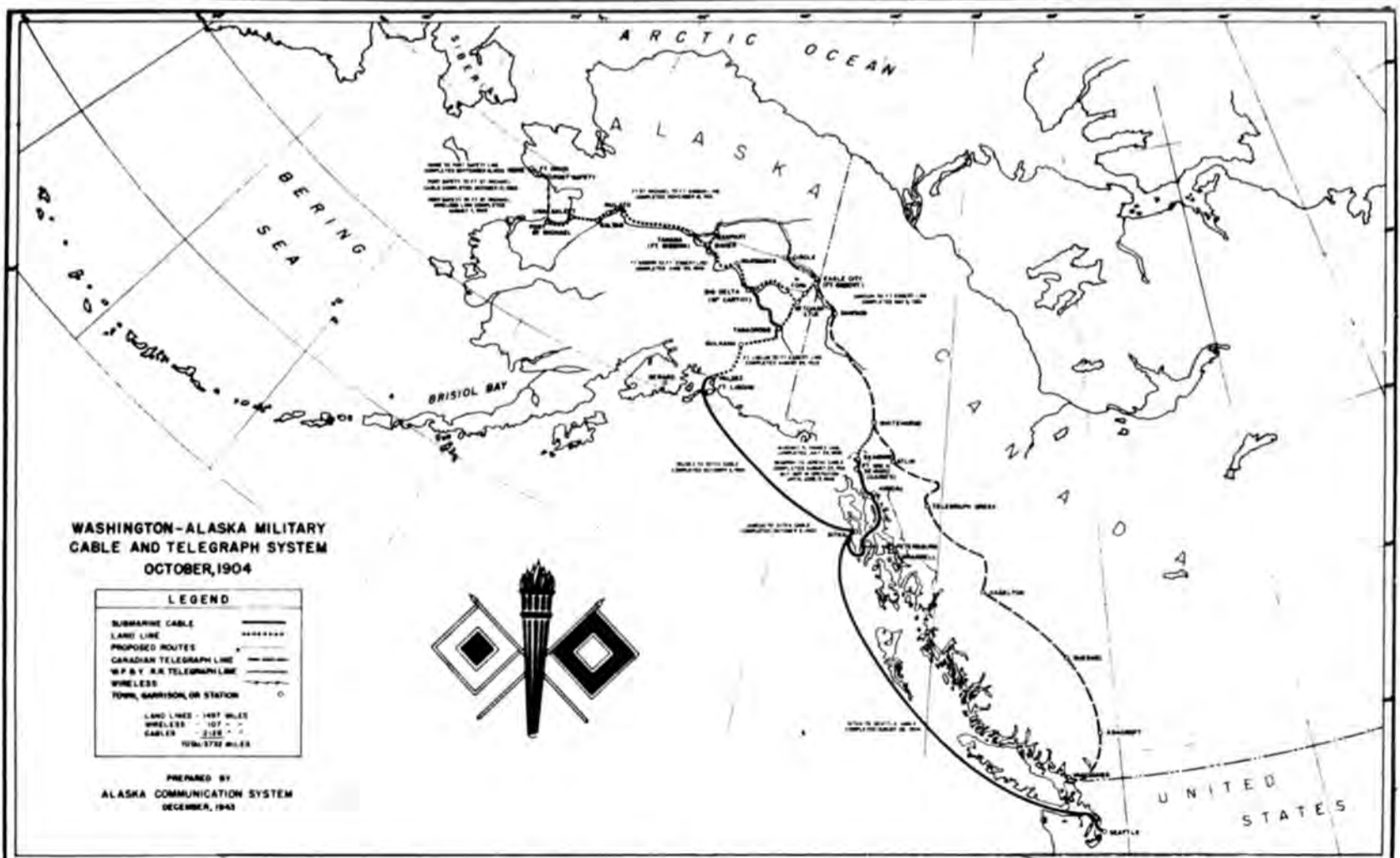
Extended tests were made on the DeForest System which in its original and earlier forms was successfully operated during the Army and Navy maneuvers in 1902 on Long Island Sound. This was the first time the Signal Corps applied wireless telegraphy to military purposes. During these tests the DeForest system barely covered the Schuyler-Wright course. Under the most favorable conditions a signal could be exchanged successfully, but when there were nearby interfering stations, signal exchange was impossible.

Undismayed by the situation Capt. Wildman applied himself to the problem of supplementing and improving the system, to the point that he solved the problem as far as the needs of the Signal Corps were concerned. His improvements were formulated and patented equally in the interests of the United States, to whom the patents were assigned, and of the inventor.

Although the Signal Corps system was not perfect, it was better than any system previously tried. It was not absolutely unbreakable, it could not be operated by men of a low order of intelligence, and it was not entirely free from interference from nearby stations, nor could it be operated during heavy thunderstorms. Although, from the looks of the tests, it did not meet many of Capt. Wildman's specifications, the U.S. Army was eager to give it a try in Alaska. A good substitute for a good electrical ground had been found, the operations and adjustments were simple enough, there was only one place within reach of the operator where there was a destructive potential, and the equipment was decided to be repairable enough.

Messages during the tests were sent daily in great numbers over the ninety-seven mile path for five weeks without any apparent deterioration in apparatus or machinery. The experiments furnished a large amount of accurate and valuable data on placement of antenna poles, their rigging, construction, dynamos and their design, transformers and their durability in moist weather, induction coils and their action, the various methods of tuning the antennas to each other, and to the closed oscillating circuits by which they were fed. The tests proved very valuable.

(Continued on Page 9)



(Continued from Page 8)

the Signal Corps purchased sample instruments and installations pertaining to every system that seemed worthy of test where a title to the instrument could be obtained for a reasonable price. In this way they acquired essential parts of important systems. Experimental work in wireless telegraphy had also been done by Maj. Samuel Reber, George O. Squier and Edgar Russel, all Signal Corps people, but none of these officers were available for assignment to the work.

For experimental work in connection with perfecting a permanent plant, Capt. Leonard D. Wildman, a graduate of Stevens Institute of Technology, who had displayed resourcefulness in various phases of field duty, was selected. With full authority to call on Major Reber and Capt. Russel for advice, the accumulated data and instruments were turned over to Capt. Wildman, who began his work by testing the capacity and efficiency of the Braun-Halske wireless transmitter, a duplicate of the plant which operated successfully during the German maneuvers. While this transmitter was not unsuccessful, its maximum capacity for transmission of messages over 63 miles was not entirely satisfactory.

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Signal Corps station FK at Circle City, Alaska, 1909. (Photo courtesy U.S. Signal Corps)

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With the exception of the DeForest receiver, the Signal Corps system had no patentable devices other than those invented and designed by the officers and enlisted men of the Signal Corps. As usual, the general public recognized that they had been taken in by the extravagant claims of wireless telegraph experimenters. The public would have to wait for experience alone to prove whether the devices adopted by the Signal Corps performed properly when transferred from a temperate climate to places like Alaska where they had to be operated and maintained by unskilled labor in an unfavorable environment.

It appeared for certain, however, that for Army uses this system was better than anything previously available on the market. Time might disprove the utility of some of the features which seemed promising, but the Army felt it was an advance over other wireless systems then in use.

Capt. Wildman was about to tackle the job of installing a communications system in the cold wilds of Alaska, and acknowledged his indebtedness to Major Reber and Capt. Russel for valuable advice and assistance. Special commendation is due Capt. Wildman for the persistent and skillful manner in which he contributed to the efficiency of the Army in perfecting the Signal Corps system of wireless telegraphy. The improvements were largely his own devices. Two patents were obtained by him for wireless inventions and were assigned to the government. He went on to Alaska, completed his task and wrote the following report to the Chief Signal Officer in 1903:

wireless telegraphy

"The system of Wireless Telegraphy devised by the Signal Corps of the Army in 1899 has been improved in details, but its range of operation is limited. It was deemed advisable to stop experimental work along these lines pending the development of this science by experts in civil life.

In 1901, however, it became a matter of practical importance to the Signal Corps to establish wireless telegraphy over extended distances. A contract was made looking into the establishment of the wireless telegraph by the Fessenden system across Norton Sound from Nome (Fort Davis) to St. Michael, about 110 miles. The contractors failed, however, to make the installation and the contract was revoked.

In view of the failure of the contractor to install the wireless system across Norton Sound, Alaska, and in order to meet the desire of the Commanding General, Department of Columbia, for telegraphic communication with Fort Davis, the Signal Corps took up this problem and is now engaged in an effort to install a system that shall work from St. Michael to Safety Harbor, near Nome, Alaska, a distance of about 105 miles.

Experimental work with separate and composite systems is being carried out in Long Island Sound by Capt. L.D. Wildman, Signal Corps, with a view to eventually be working between Fort Schuyler and Fort H.G. Wright, a distance of 105 miles, and of which about 10 miles are lowland. For this purpose masts 140 feet high have been constructed, and completed in order to make final tests. Captain Wildman now awaits special motor dynamos and transformers.

Meanwhile to the delay, installations of masts and antennas are now being made at Safety Harbor and St. Michael, so that whatever system proves satisfactory in Long Island Sound, can be utilized in Alaska by 1904 with the suitable sending and receiving apparatus. At both St. Michael and Safety Harbor the permanent plants are now in process of transportation and erection. There are to be at each station two triple masts 200 feet high, between which are to be a suspended fan shaped antenna, consisting of 125 copper wires one-foot apart. The motor power is to consist of a 5 hp gasoline engine and a 3 kW motor dynamo, 60-cycle alternator. At one station will be a transformer, stepping up from 500 to 20,000 volts, and at the other, stepping up from 500 to 25,000 volts. The large Muirhead receivers, which now seem to be the best available type, are to be utilized in this work unless meantime other experiments produce something superior.

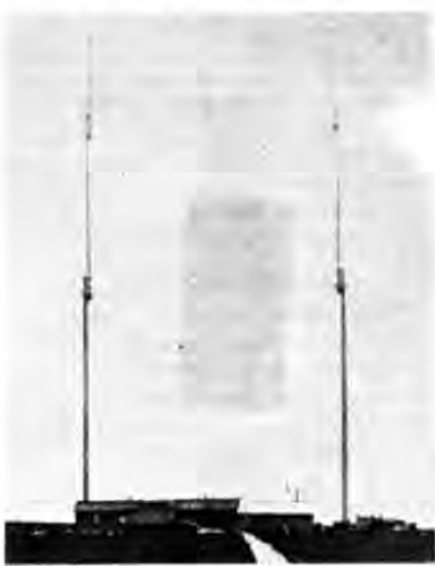
Another contract was made with the American-Marconi Wireless Telegraph Company to establish wireless communication between two points in the Tanana Valley where great difficulties were expected in constructing an ordinary telegraph line and in maintaining it satisfactorily, the contract locating the connecting of two points about 164 miles apart with an intermediate station should the Marconi company so decide. It was hoped that this installation would be made by October 1902, but the contractors were not able to install the system last year.

Report to the War Department, Washington, D.C., October 3, 1903

"While communication is now heard regularly by telegraph between the civilized world and the Yukon Valley westward to St. Michael, yet restoration of communication with Nome has so far proved impractical. The cable between Nome and St. Michael was so badly injured by ice, some 40 miles of it having been carried away, that its repair meet the urgent recommendations of the Commanding General, Department of Columbia. Efforts are being made, with prospects of success in 1904, to establish communication by wireless telegraphy between St. Michael and Nome across Norton Sound, Alaska, a distance of 108 miles."



(Continued on Page 10)



Old wireless telegraph station at Fort St. Michael, Alaska. (Photo courtesy U.S. Signal Corps)

G.L. Mellegan installed the St. Michaels, Alaska Wireless Station, when he was with the U.S. Army Signal Corps. This was the first commercial wireless station ever established. He said while he was in Alaska, he noticed the telegraph poles still standing which were put there in 1865 by the Western Union Co. At one time a telegraph line was started from Alaska to Europe via the Bering Straits and Siberia. When the Atlantic cable was laid, it put the trans-Alaska telegraph line out of business.

Alaska Communication System

October 4, 1904, from
Capt. Wildman

"The Signal Corps wireless station at Nome could communicate with a similar station on the Kamchatka Coast, but the infertile and sparsely inhabited country thence to the nearest Russian station of Nikolaevsk would render any such enterprise unlikely should it be suggested. As has been stated in previous annual reports, efforts to establish a wireless system across Norton Sound and in the valley of the Tanana, awarded to different companies under public proposals, failed entirely.

The contract to establish communication was abandoned in its primary stages in one case, while in the other the efforts proved fruitless after two or more years trying to construct a permanent line through that section, and it became necessary for the Chief Signal Officer of the Army to undertake through the officers and men of his Corps, a wireless installation across Norton Sound, and work commenced along two lines: First, to install those available and then perfecting the system later. Second, as the short navigable season of four months in Norton Sound rendered it impracticable to carry on experimental work in Alaska, it was decided to establish two stations in connection with the coast defenses of the United States, where they would have a permanent value, and after devising a successful typical plant, transfer its sending and receiving apparatus to Alaska."

The arrangements for the temporary plant were made under the general directions of Major Russel, whose special and important duty in connection with the Alaskan cable installation left him but scant time for arrangements, whose executive duty must necessarily be carried out 2,000 miles away by an assistant not under his personal observation.

In the late summer of 1903 the Norton Sound base was established. At Safety Harbor and St. Michael there were built portable houses, in which were installed engines, batteries and wireless instruments, supplemented by two masts at each station 210 feet high, between which were suspended fan-shaped antennas. These poles, the highest ever erected on the Pacific Coast, and the antenna were installed through the resourcefulness and professional skill of Mr. R.D. Ross, a civil engineer employed for this purpose.

Unfortunately, part of the wireless material failed to reach St. Michael because the steamer it was on, the *Meteor*, was disabled enroute. First Lt. A. T. Clifton, with a selected force of signal-men familiar with wireless work, jury-rigged instruments through which meager wireless signals were exchanged during the winter.

Meanwhile, experimental work was carried on in Long Island Sound by Capt. Wildman with separate and composite systems. He eventually devised a composite plant, originally based on the

DeForest system, but largely modified by inventions of his own. This plant worked with great success between Fort Wright and Fort Schuyler New York. The transfer of the wireless equipment from Long Island Sound to Norton Sound was accomplished by Capt. Wildman during the next summer. The method of installation was such that the installation was easily made.

Capt. Wildman, at St. Michael, and Sergeant Treffinger, at Safety Harbor, installed their respective systems in less than two days. Capt. Wildman reported that the wireless material was landed and delivered at St. Michael by noon of August 4, and said:

"At 9 o'clock AM on the 6th, complete messages were exchanged, and the telegram from me at Safety Harbor was released and set forward. No serious trouble of any kind was experienced and every part of the machinery worked in a perfectly satisfactory manner. Since that time we have been pushing the machinery about 20% overloaded in order to see if it could be broken down. The signals are fine and louder than I have ever heard them at either the stations when at Schuyler or Wright. The operators have no difficulty in reading the messages while the relay is working in the same room and with the engine running in the

Table 1. Callsigns of some of the early U.S. Army Stations in Alaska.

FB	Fairbanks
FD	Nome
FE	Mouth of the Yukon
FG	Fort Gibson
FK	Circle City
FM	Ft. St. Michael
FP	Petersburg
FQ	Ft. Egbert
FX	Ft. Worden

next room and men walking about and talking in an ordinary voice anywhere in the house."

On August 17, 1903, the Nome station was thrown open for commercial business with the rest of the world, and the wireless section of the Alaskan Telegraph System was an everyday adjunct of the electrical appliances of the twentieth century. It daily transmitted the entire telegraphic business of the Seward Peninsula. In one afternoon 5000 words were exchanged between Safety Harbor and St. Michael.

Through the professional skill of Capt. Wildman and his subordinates, the Signal Corps had started operating the longest wireless section network of any commercial telegraphy system in the world. Some of this early equipment was still functioning as late as 1922, in Craig, Alaska. The old 3-kW transmitter was still run by the gas engine, and the transformer, glass-plate condensers, straight open spark gap with cup-like electrodes and plain helix were still going after all those years. Wireless proved itself easier to maintain than telegraph wires.

===== 30 =====

Reflections

by WILLIAM A. BRENNAN

FIFTEEN YEARS AGO we received permission from Richard A. Ross K2MGA, Editor of the Magazine "CQ" to republish Edmund H. Marriner's article on the "WAMCATS" of Alaska. Since then we have had several members suggest we feature "Wamcats" since it was one of the first large organizations that made use of the new invention --- "Wireless" to handle traffic in a region where all other services had failed ... Alaska. In the year 1903 the U.S. Army Signal Corps established the Alaska Communication System. Many hundreds -- and perhaps thousands have worked for "ACS" since 1903. Among them are listed John Penaz, Girard "Gerry" Moorman and Lawrence "Larry" A. Burrow who give us a slice of nostalgic history about the Wamcats in this issue of the Journal. Spacial thanks to "Ed" Marriner for his early journalistic efforts to record the events of these early days before it becomes lost to posterity.

'FUN WITHOUT SUN - TRY ALASKA'

How to become a "Sourdough"

Try One Hitch in the Wamcats

The Log of Larry Burrow-LB

Dear Bill:

Am enclosing a bulletin put out by the ACS annually for a few years after WW2, but it was discontinued and this copy is the last one I received. It gives a pretty good idea of the history of the WAMCATS/ACS and known officially by the army as the 1st Signal Service Co, SC USA. However during WW2 it became too large for a company and was renamed to the (9427 TU-- Technical UNIT) from around 150 men in the 30's to over 3000 during the war, this included all the civilians who were employed as teletype operators, tone operators, counter clerks etc.

As you will notice the ACS was run by the Signal Corps but the funds for the operation was appropriated annually by Congress and all the tolls collected were turned in to the general fund of the gov't. Our pay, uniforms, etc, came from the army though. We were unique in that we were under no other command and responsible to the Chief Signal Officer only, even the Alaska Defense Command had no say on how we ran the organization. It came as a surprise to many high ranking officers and VIPS who tried to boss us around. Whenever we had a hassle with one all we had to do was pick up the fone direct to the CSO and hand him the fone. He was then told in no uncertain terms to MYOB, he would get red in the face and then stomp out. Consequently they were laying for us on the streets and the MP's would stop us and tell us we were out of uniform or take your hands out of your pockets, even if the temp was 20 below. However they would soon come around when they wanted some special personal service, they often found they had a low priority such as "sorry the fone circuits are out, etc."

We were one of the few outfits in the military that made money for the gov't., annually when the finance report went in to Wn., DC of tolls taken in plus the credit we received for handling all other gov't., agencies such as Com TRsy Int Jus of which there were about 40 for their telegrams, fone calls, etc plus the Territory of Alaska who had a half rate of the commercial charges, we were always up in the black.

I do not have the date but sometime in the early 60's the ACS was transferred to the Air Force who took command of the ADC. Some of our military men in key positions transferred in grade to the AF plus many of the civil service employees who stayed on during the transition period to train the AF personnel. When Alaska became a state, they formed their own communication commission and eventually the old ACS was sold by the gov't., to RCA in the 70's (now owned by Pacific Power Corp.) Ed. Its OK to use any of the material from the bulletin for reprinting as the ACS PR dept. always passed it on to the news media to let the members know what the ACS was all about and the services rendered.

73 Larry Burrow "LB" - 3383-P

PS- Additional duties performed by the ACS.

FCC

The Federal Communications Commission had only one office in Alaska which was at Juneau, the capitol. So arrangements were (Continued on Page 11)



Getting Back is "Half the Fun"

ALASKA COMMUNICATION SYSTEM

ACS. Log of Larry Burrow in Alaska

(Continued from Page 10)

made by them with the ACS to give prospective radio operators the examinations for the different tickets. This was because the great distances involved to go to Juneau. At the ACS stations the Operator in Charge or the Chop gave them.

Way it worked a candidate would write in to the FCC office in Juneau and the inspector in charge would then send the test material in a sealed envelope to the ACS station where the test was to be conducted and also tell the candidate where to go. For example at Ketchikan I was the one that conducted the tests. I would open the sealed envelope in the presence of the candidate and a witness, generally the postmaster or US Commissioner. First I would cut the tape for the code test on the Boehme head. This gave the candidate a perfect text to copy for his receiving. (No excuse by him for poor fist to cv). Then have him send and if I could cv it would pass him. I would check his receiving copy and if it passed per FCC regs., would let him open the written test. I was not to pass on the written part as that was put in an envelope by the candidate and sealed along with his cy of the cw rcvd test. I then had to sign a FCC form along with the witness and returned it by mail to the Rdo Insp at Juneau.

Ketchikan being the HQ of the Coast Guard in Alaska had quite a few radiomen getting out of the service at the end of their hitch who wanted to have a coml ticket ready, so we gave quite a few exams a year. Also quite a few would be hams.

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Weather Bureau

As there were only several regular weather bureau offices in Alaska, nearly all the stations, ACS that is, took regular weather observations and sent them in to obsrs at Nome, Fairbanks and Juneau then later Ketchikan. However at Ketchikan, before WB came in the OIC was required to make the regular observation at 4 AM and 4 PM addressed to Obsr SFO for the weather map sent out to all ships at sea. Nome was another, which was 3 hours different where I had to make the 1 AM schedule 0000 GMT. All the smaller stations took several observations daily, but it was for Airways use and pilots were requesting extra reports which we gave them for free. This meant extra skeds, but glad to do it for them. While at Candle, I received an extra \$15 a month for this service from the WB. We all had to take a short course in meteorology which the WB gave us. So if you were at a one man station, you sure became a jack of all trades. At Ketchikan, I made the 4 AM observation, encoded it then came on duty to send it. I took the observation half an hour before I was due to go on shift. The OIC took the afternoon obsn. I received 20 bucks a month from the WB for that. But I never got a day off. I was stuck on that for 2 years before a regular weather bureau office was established. Then the OIC big-heartedly put me on a day shift. He had promised me he would RJ me once in a while, but he never did.

Bill: Following are a few items you might be interested in. On SS Queen WGCP winter 1929. Some OT might remember it. Was in the Gulf of Alaska, when I picked it up. Don't remember the call letters of the Jap ship so will use JAP as call letters.

KPH de JAP QTC (shortened the call up)

JAP de KPH R QSW 706 QTC for u.



SS Victoria
"WAD"

Launched 1870 for the Cunard Line. It was Queen of the Atlantic for many years. Served as transport during the Spanish American War and sold for junk in 1957. It was the oldest passenger ship afloat. Built of iron it did not rust and made a good ship for the Alaska Steamship Co. in the Bering Sea.



U.S. Army Station at Nome, Alaska, 1912

The Jap sent his message on 600 never did go up. KPH came back with QSL then started sending his msg on 706. After completing it there was a long pause then JAP came back with "Ga to stop Sig. The opr at KPH repeated the msg and said K. The Jap needed another cqn then added "Pls QRS I am a virgin opr". Finally the opr at KPH got it thru and received a QSL from the Jap. It was too much for KPH he came back with "If you are a virgin opr, I would suggest you stay off the docks of SFO, it might be dangerous. (This at abt 15 wpm) The answer came back from the Jap "? pls rpt" KPH says "NIL GN." There was silence then from all over the Pacific was heard "HI" Hi from at least a dozen ships. From spark & tube.

I had the gy shift so had to copy the PX from WII on the east coast then type it all up to be posted on the bun boards and passengers section and of the first hard copy to the OM.

.....

While I was on the USAT cablesip Dellwood WUAJ in 1930 as CHOP, we were picking up submarine cable to repair a break in it. The break was about 50 miles off Sitka Alaska in the Gulf. We had just picked up the section and tested it back to Seward and buoyed that end, then ran south for about 50 miles and picked up the cable beyond the break and tested to Ketchikan end, which turned out to be ok. This meant we had to splice in about 50 miles. The weather was calm (unusual) and had the KTN end terminated on the siphon recorder when the KTN opr said he was gg to cut us in on the SO (Seattle leg). This was on 12 June, 1930. Lo and behold, it was the blow by blow telegraphed report of the Jack Sharkey - Max Schmelling heavyweight world championship fight. Schmelling won it on a disqualified Sharkey in the 4th. The engineering crew and oprs decided to keep quiet on the results so they could make some bets with some of the crew. The word finally got out to the losers about it and there were some aching heads the next day. Hi. However, the point is I didn't have to copy the regular px run on it that night and also, I wonder how many other ships have received any news by LL 50 miles at sea.

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Nome Alaska 1930-1033-Candle 1933-1034 then back to WXY Nome-1034.

In Sept. 1930 was called in to the ofc at HQ's in Seattle and asked "how would you like to go to WXY Nome?" Told them it was fine with me. The Nome station had burned down on Xmas day, 1929 and was in the process of rebuilding and needed some one to help the civilian engr installing new equipment. Arrived Nome on last boat of the season, this was Oct, the first boat would be due to arrive in mid June of '31. So had to order supplies for 10 months, so I had quite a grub list.

Helped install the equipment and as I was low man on the totem pole, guess who had to crawl under the house and pull wires with sled dogs trying to help out. I was also the RJ for one of the operators whose hitch was up in the middle of the winter, but wished to be discharged at Nome instead of returning to Seattle. He was going prospecting and mining. He lost his shirt and had to go outside that fall 31 on a blue ticket. The blue ticket was issued to anyone who did not have enough money to survive the winter. They went steerage to Seattle.

(Continued on Page 12)

(Continued from Page 11)

BURROW'S LOG



SS: Baychino—Ghost ship of the Arctic



Canadian SS Baychino owned by Hudson Bay Fur Co., stuck in the ice about 200 miles north of Nome, winter of 1930. The ship had a full cargo of furs which were flown out. Furs hauled to planes by dog teams. Ship abandoned, was sighted occasionally and became known as . . . "The Ghost Ship of the Arctic". Barrows Photograph.

In the fall of 1930 the Canadian ship Baychino owned by Hudson Bay Fur Co., was late getting around Pt. Barrow was caught in the ice north of Kotzebue with a full load of furs. Both WXW Kotzebue (ACS) and WXY Nome contacted it. Hudson Bay decided to abandon it for the winter with the exception of keeping a couple watchmen aboard to guard the furs as it was within easy reach of dog teams and Eskimos on the coast. The following spring when the wx had settled down and warmed up before the breakup, Hudson Bay hired several planes with Northern Air Transport to land near the ship and ferry the fur out. The planes landed on a smooth spot on the snow covered ice about a mile away. They then had Eskimos with their dog teams unload the ship and transport the furs to the planes. We furnished the communications for them. After the furs were removed, the ship was abandoned. After the breakup, no sign of the Baychino. Then 2 years later it was sighted among ice flows south of Barrow by mushers with dog teams. It was boarded and practically everything moveable had been stripped from it. It disappeared again, then the following year it was sighted perched on top of the Arctic. It was never seen again.

Spring Thaw — Nome



LAWRENCE A. BURROW
3383 - P

Picture of Larry Burrow taken in 1932 in front of the Nome ACS Radio Station. He relates ..."Every spring in April when the thaw starts, the OIC decides it is time to shovel out the sidewalk to the Radio Station from the nearest road about a quarter mile away across the tundra." He said, ..." As I was outranked by a Cpl. and the Sgt. who was in charge ... guess who did it between schedules? This time I had the shovel job half finished when the WX turned bad, next day a blizzard filled it shut so I had to do it all over."

One evening after the station had closed for the day, about 6 PM, heard a spark set calling WXY on my BC rcvr. As I was the only bachelor, my quarters was in the radio station and as I also had to make the 1 AM weather schedule with WXE Anchorage, I generally had the station rcvr on 500 KC heard the call on it so it sure was broad. Anyway it was a Russian station RB71 calling me. At that time we did not recognize them so had no contact or supposed to work them. This was during the "Round the World Flights, Lindberghs, Willey Post, Robbins of Ft. Worth, several others flying west with the exception of Jimmy Mattern coming from the other direction. Answered RB71 6n 500 who asked for a schedule for wx reports for Mattern. Couple days later he told me to contact Anadyr or Petropavalof radio on LW, they already had our frequencies. RB71 gave me Anadyr's frequency and contacted him. We had quite a time getting thru to each other as I didn't know Russian and he knew few English words, but with the use of Q sigs, we got by. Anadyr told me that Mattern had crash landed near there and were preparing to fly him to Nome. Next day, we unofficially were notified by HQs Seattle to keep the schedules going. We kept contact with Anadyr, but every time I asked a question and wanted a reply from Mattern it would be 10 or 15 minutes before they answered. He eventually arrived Nome by a Dornier flying boat maned by a crew of 8. Had six propellers. The press Vips etc were there to meet him. He came up to the station and told me the reason for the delays on answering questions was that every word both received and sent first had to go thru interpreters, then the censors who redlined anything they couldn't understand.

I maintained a daily sked with RB71 every evening all summer during the flights and eventually learned enough Russian words to chat a little with the opr, but he sure didn't say much, guess he knew he was being monitored. When the Lindberghs came thru on their trip to China, Mrs. Lindbergh was the operator. She was a beginner, but sure bitten by the radio bug. They were in Nome 3 days and every day was up at the stn wanting to know more about radio. She was very nice. When they took off and headed toward Siberia I held contact until reached the Siberian coast and she said "good-bye I'm going try contact the Russians." Their trip finally ended in China with a cracked up plane. Her book "North to the Orient", tells of her trip.

When the last flight had been made, I called RB71 one evening, but I never heard them again.

Muscat Grapes and Muskrat Traps

While at Nome I had the morning shift. Everything was by schedule. One morning I had the 11:45 AM weather schedule where I contacted all our tributary stations, ie, Teller, Kotzebue, Candle, St. Michel and Nulato, in that order for the Airways weather. Teller told me he was having Xmtr trouble and wanted me to come back to him for tfc after picking up the weather from the other stations as he had some tfc and didn't know if he would be back on the air that afternoon. Cleared the tribs and came back to him. He had a 100 word nightletter that had to get out as it was an order from the local trading post for last minute supplies before the last boat of the season departed Seattle. In the order of groceries was, as I copied it "one barrel of muskrat rapes." After completing the msg, hung it on the hook for my rj who came on for the afternoon shift. When he transmitted the message he came to "Muskrat rapes" and said to himself. "Larry is copying off the wall, he means traps.", and so transmitted it. Couple months later a tracer came in by mail from HQ saying the sender was demanding a refund on his telegram as he received a barrel of traps, when he wanted a barrel of muscat grapes. I was found guilty and had to acknowledge the error. About a month later a telegram from HQ Seattle came in with quote, "Will soldier responsible for error, pay for the telegram cma. If not, disciplinary action will be taken." This meant I would be busted and lose nine dollars a month, also taken off the promotion list. So I said I would gladly pay the \$5.80 as that was the rate for a 100 word NL to Seattle. However that is not the end of the story. The following summer, the owner of the trading post at Teller, sent a letter to HQ offering to refund that money I had to pay, but also wished to give the opr responsible, a bonus, as that spring the country for the first time in many years, was over run by muskrats and he was the only store with 12 dozen traps (a barrel) and made much more profit than if he had grapes.

CANDLE - WXN

(Continued on Page 13)



CANDLE RADIO STATION - WXN [1934]. Burrow relates station crew used to ski down the hill to the river which was frozen over until May. Larry Burrow photo.

Larry Burrow's Wamcats Log

(Continued from Page 12)

The reply from Seattle to the trading post in Teller was "we are glad that when the ACS operator makes a mistake in favor of the sender, he makes a profit cma, however an error was made, so no refund or bonus will be accepted regards." Some one got hold of the story and a year or so later it was published in "QST magazine". I still didn't get a promotion for 2 years. Hi. To this day I don't know how it happened.

In 1935, I was transferred to Sitka from Candle. The following year about 4 AM on a Sunday morning, some one woke me up at home pounding on the door and shouting, "The radio Station is on fire." It was the Opr in Charge. There were just the 2 of us. The radio stn was housed on the second floor of an old Russian log bldg made of logs. It also housed the post office, library and marshall's office. When we arrived, it was too late to save anything. I lost my sw receiver that I had been using there, as we had not been supplied with a sw set. One I had built with 3 2oIA tubes, a regenerative ckt., but my pride and joy was also lost, my bug, a little ole "Blue Racer." Everywhere I went, all the oprs wanted to use it. Had acquired it at Nome. I had another bug at home tho it was a newer model vibroplex with the flat bar and square weight. Never could get it to work like that blue racer.

When I arrived at Sitka, had my ham xmtr tore down and parts in an old wooden apple box, but had never set it up. So hurried home after the fire and put it together while a couple men put up a couple 40 foot spruce poles with ropes and pulleys on it. All I had was a pair of 45's TPTG ckt that I had taken from QST when at Candle. K7EKE on 40 meters.

Anyway by that afternoon, I was on the air and gave out an emergency call. I was in luck. Picked up rite away by a ham in Prince Rupert BC and asked him to call the marine station VAJ on the fone and tell him to call WXH Ketchikan (VAJ and WXH had hourly skeds) and tell WXH that we had burned down and to listen for me on about 7150 DC. The ham said sure thing. The OIC Sitka had a National superhet rcvr, so we set up in our front room. In less than an hour, I had QSO with WXH. He would hardly believe me when I told him I had only about seven or eight watts output. Anyway Ketchikan pulled a xmtr out of storage and with technicians, put it aboard a Coast Guard cutter stationed there. They arrived a couple days later and started installing in another building. I continued handling traffic from our front room, even tho there was no privacy for my wife and 2 year old son. Held WXH for 5 days with that 7 watter. Again we were lucky. The bottom dropped out on 40 m just as the technicians got our new xmtr on the air. We missed just one schedule with WXH because of the fire. I put in for a new SW rcvr and bug to the ACS, but they turned me down saying I shouldn't have had personal equipment in the station. Big deal after using my home for a station for 5 days. However we were given a commendation for the good job we did.

.....
30
LB



STATE OF ALASKA

Certificate
of
Appreciation
to

Lawrence A. Burrow

*In recognition of and appreciation for rendering
outstanding public service and noteworthy contributions
to the Citizens and State of Alaska.*



Stephen M. Polovina
LIEUTENANT GOVERNOR
OF ALASKA

Neil Ashby
GOVERNOR OF ALASKA

1/20/84
DATE



OPERATING ROOM, Station WXY, NOME, Alaska 1931. Operator on duty - Lawrence A. Burrow, SOWP Member 3383-P. "Larry" also served on the SS Queen (1929); Seattle/WVD; USAT CS Delwood (Calbeship CHOP/WUA; 1933 Nome AK/WXY; 1934 Candle WXN; 1937 Sitka, AK/WXC



S.S. QUEEN - WGCP [Former calls GX, WGX [near Sitka, Alaska. The Queen was built in Glasgow Scotland in 1880. The hull is iron. The ship was nearing the 50 year mark when this picture was taken in 1929. This was "Larry" Burrow's first assignment as R/O. Received his 'ticket' on May 29th 1929 and sailed the next morning at 10AM for Alaska.



PROCLAMATION

WHEREAS, the U. S. Army Alaska Communication System, a unit of the Signal Corps and a member of the National Defense Team, founded May 26, 1900, has served the people of Alaska in peace and war, and

WHEREAS, from its beginning it has been staffed by dedicated men who have matched their versatile skills and raw courage against imponderable odds to successfully meet the challenge of providing communications to and within Alaska, and

WHEREAS, it has pioneered and excelled in the art of arctic communications since it successfully established the first wireless telegraph system in the world for commercial messages, and

WHEREAS, it maintains thousands of miles of telephone and telegraph line, submarine cable and radio circuits in Alaska to ensure communication services for the general public, commercial interests, territorial and governmental agencies, fishing fleets and outlying communities, and has constantly striven to give Alaska the most modern communication facilities in the world, and

WHEREAS, the men of ACS have diligently and enthusiastically worked for Alaska on duty and off, contributing greatly to the economic, civic, social and personal well-being of its inhabitants, and

WHEREAS, the present growth and unity of the Territory of Alaska would have been impossible without the services rendered by the U. S. Army Alaska Communication System;

NOW, THEREFORE, I, Waino E. Hendricksen, Acting Governor of the Territory of Alaska, do hereby proclaim Monday, May 26, 1958, ACS Day in the Territory of Alaska, and do call on all people of our Territory to observe this day appropriately.

IN WITNESS WHEREOF, I have set my hand and the Seal of the Territory of Alaska this nineteenth day of May, in the year of our Lord nineteen hundred and fifty-eight.



Waino E. Hendricksen
Waino E. Hendricksen
Acting Governor of Alaska

ATTEST: *Waino E. Hendricksen*
Waino E. Hendricksen
Secretary of Alaska

ALASKA COMMUNICATION SYSTEM

FOREWORD

EIGHTY FIVE YEARS AGO, The Congress of the United States passed an act [May 26th 1900 which provided funds, staffing and necessary entitlements to establish a communications service to and within Alaska to handle both military and commercial business, as the Secretary of War felt necessary in the Public Interest.

This program spawned one of the greatest peace-time programs ever undertaken in the communication field since Marconi, using and combining ideas of Maxwell, Hertz and many other scientists to perfect a system on signal ing with electronic waves.

Considering that Marconi sent his experimental Signal "S" across the Atlantic on Dec. 12, 1901, it was certainly a bold move to consider such a gigantic project in an area of the world where nature's elements could not have been more adverse, considering location, terrain and climatic conditions of this isolated wilderness of ice, snow and paralyzing blizzards.

History books on communications are replete with stories of ships being saved by Wireless and the wonderful benefits wireless has furnished mankind. It is reported that Thomas A Edison once said . . . "I begin where the other fellows left off". Hence belated credit should be given to men such as Gen. Adolphus W. Greely, Chief of the Signal Corps; Leonard D. Wildman who was responsible for much of the work and planning and others who undertook to provide suitable equipment that could be depended on. They accepted the challenge and in the space of a few years, built one of the world's greatest networks. It established the Signal Corps of the U.S. Army as a leader in the building and operating a system which was to "open" up the wilderness of Alaska to and develop it as one of the Great States of our country.

During the 1940's, the Army Communication System of the Signal Corps published annual Year Books. We believe it has long since been discontinued. We were fortunate in having Society members Lawrence A. Burrow and G. J. Mooremann (former members of Wamcats) furnish us copies of these historic publications for reference and use. Much of the data therein has been used in the following listing of stations, etc. Our thanks.

ACS OBSERVES 49th ANNIVERSARY IN ALASKA

The Alaska Communication System, a Signal Corps agency of the U. S. Army, celebrates its 49th anniversary on May 26, 1949. That is equivalent to saying that May 26th marks the 49th anniversary of communications within Alaska, since the history of the ACS is really the history of Alaskan communications.

World-wide attention was focused on Alaska in 1898 as a result of the gold strikes in the Far North, and it was about that time that the U. S. established several small military garrisons at widely separated points in the Territory for the purpose of strengthening the Territorial law and order processes. Administration of these U. S. Military garrisons in Alaska was extremely difficult then as there were no means of long distance signal communication. In those days it often took as long as a full year to send a message from the interior of Alaska to the United States and receive an answer.

Congress took cognizance of this situation in 1900, and, as a remedy, passed an act on May 26th of that year which provided:

'For the purpose of connecting headquarters at St. Michael, by military telegraph and cable lines with other military stations in Alaska, four hundred and fifty thousand, five hundred and fifty dollars: Provided, that commercial business may be done over these military lines under such conditions as may be deemed by the Secretary of War, equitable and in the public interests.'

In accordance with Congressional mandate, the Secretary of War set up the Washington-Alaska Military Cable and Telegraph System as the agency of the U. S. Signal Corps to provide the communications called for in the Act.

In a short time this system became known to the Army and to all Alaskans as the 'WAMCATS'.

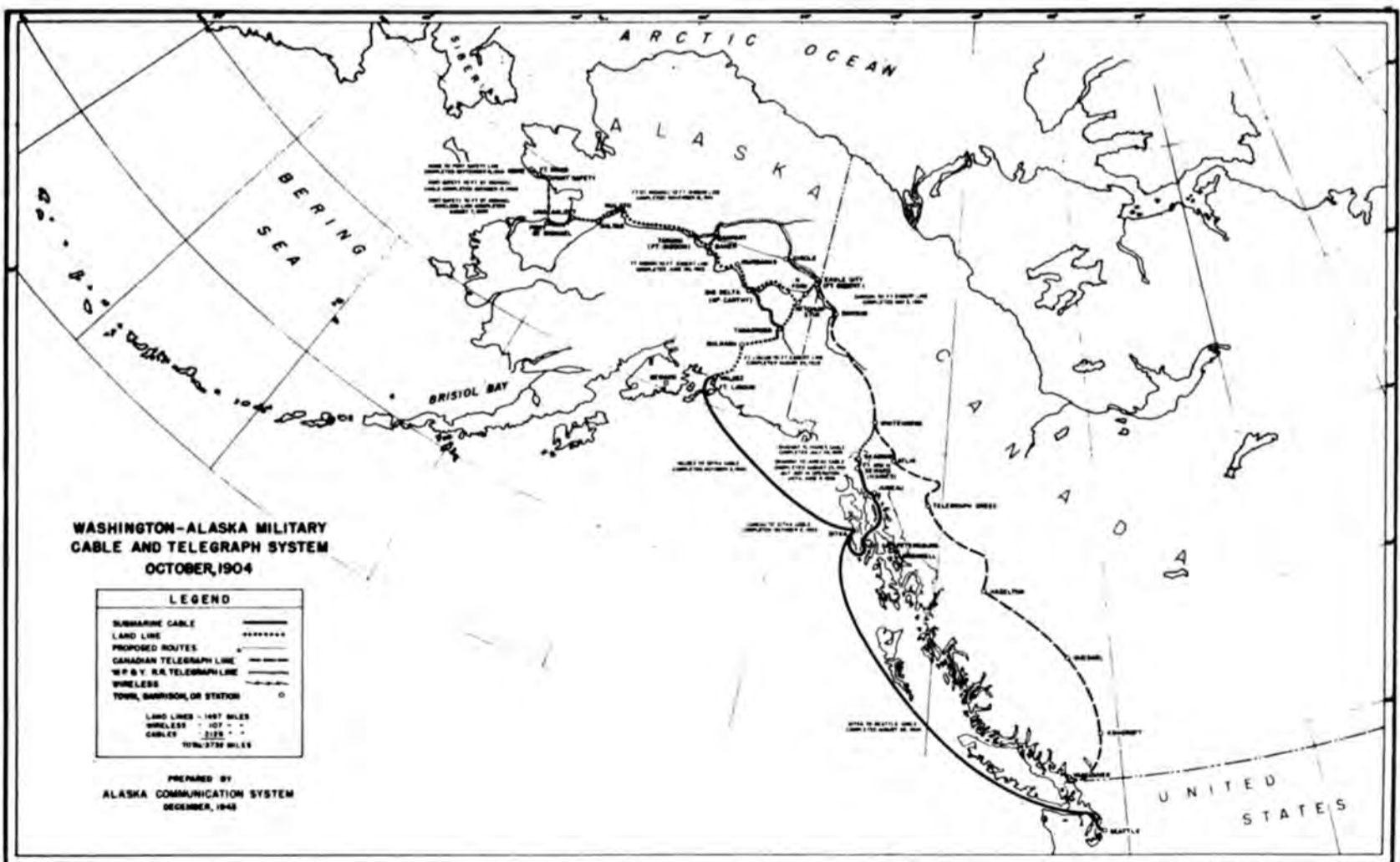
In August of 1900, a small but determined group of WAMCATS signalmen, assisted by a detachment of doughboys from Fort Davis near Nome, began the construction of a telegraph line from Nome to Port Safety, a distance of 24 miles. This very first telegraph line of the ACS was completed and put into service on September 15, 1900.

In 1903 construction was completed on 559 miles of telegraph line between Fort Gibbon at Tanana (west of where Fairbanks is now located, and Fort Egbert at Eagle City, near the Alaska-Canada border. Headquarters, Department of Alaska at Fort St. Michael was then brought into telegraphic communication with the U. S. over a circuit of approximately 2,500 miles. From Eagle City the line was connected with a Canadian line to Ashcroft, B. C., which in 1901 was the Western Union 'end of the line.'

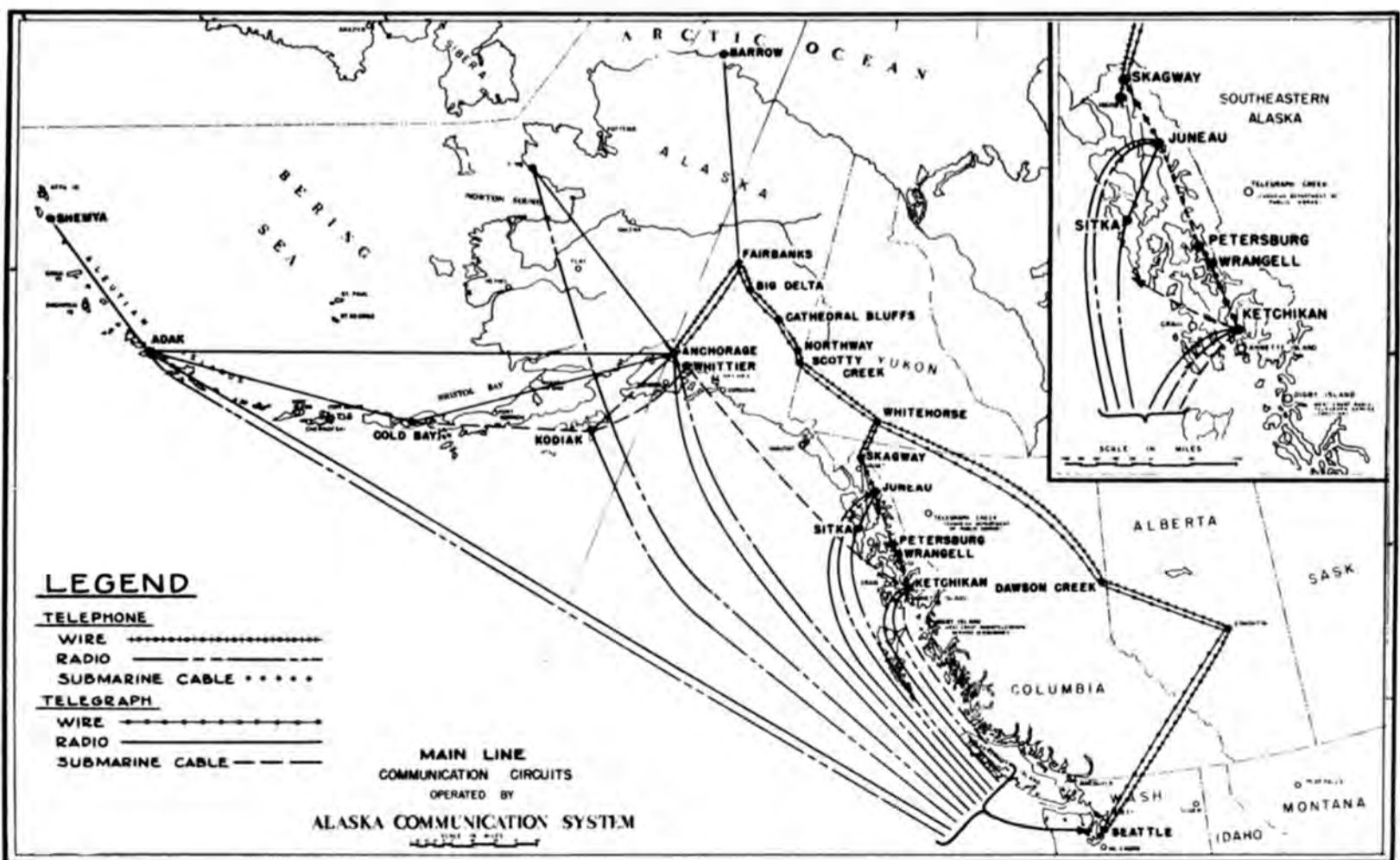
General Adolphus W. Greely, Chief Signal Officer of the Army at that time, reported on this particular operation that the supply problem alone was one to test the ingenuity and resourcefulness of the hardest group of pioneers. Practically all materials had to be sledged into the interior in the roughest imaginable trails, or over primitive undeveloped country, in the summer time. The magnitude of the undertaking may be gathered from the fact that from Fort Egbert alone between November 1902 and June 1903, a total of 220 tons (440,000 lbs) of supplies and materials were sledged or packed out onto the line in the interior of Alaska.

About that same time, another detachment was building a line from Fort Liscum at Valdez, northward to Fort Egbert, 420 miles away. One of the officers on duty with the ACS at that time was 1st Lt William (Billy) Mitchell, later a general, who so many years later was to cause such a furore in military circles with his astounding predictions, which were first scoffed at and later all too powerfully proven, on the importance of air power in warfare.

In 1903 experiments with radio were conducted by the WAMCATS between Port Safety south across Norton Sound. At 9:00 a.m. on August 7, 1903, messages were exchanged satisfactorily between the two locations and commercial service was immediately placed into effect. It is believed that this was the first wireless telegraph system in the world operated regularly as a part of a telegraph system handling commercial traffic. Certainly it was the first point-to-point wireless channel put into service on the American continent for commercial traffic. (Continued on Page 15)



<p>ACS New Name Adopted</p>	<p>Will Rogers Wiley Post Crash</p>	<p>Pioneer Flights Over North Pole</p>
<p>In 1936 the name of the System was officially changed to the Alaska Communication System, under which name it operates today. It is now generally known in Alaska and within the Signal Corps as the 'ACS'.</p> <p>During the Aleutian campaign against the Japs in 1943, ACS communication teams followed the combat troops ashore at Attu, Kiska, Shemya and Amchitka and in short order established radio communications from these isolated posts back to the main headquarters at Adak, Kodiak and Anchorage. At the same time, other men from the ACS were installing post telephone systems and improving the long lines for the interconnecting of the main military establishments in Central Alaska. The ACS also installed all of the communication facilities for the Army Airways Communications System, and the Aircraft Warning Service in the Alaskan area. The ACS was highly commended for the splendid work done and remarkable results produced in support of the war effort in Alaska.</p> <p>The present mission of the ACS is to provide arterial communications between the U.S. and Alaska and between key points within the Territory for (1) the military, (2) the U.S. Federal agencies -- approximately 40 of these, (3) the Alaskan Territorial agencies, and (4) the general public, including the individual civilian and soldier, all business agencies, the press, piping of live broadcasts to Alaska, ship-shore service for commercial vessels, fishing fleets and (5) more recently, responsibility for the Arctic Ionosphere Research Program.</p> <p>To perform this mission, ACS presently operates a network consisting of the main ACS station in Seattle and a total of 33 main stations and 7 branch offices at various outlying points in Alaska. These stations vary in size and activity from the very large and active combination military-commercial installation such as the one located in Anchorage, serving both the city and Fort Richardson, with an average of 150 military and civilian employees, down to the small outlying and remote stations such as the ACS two-man station at Point Barrow within the Arctic Circle.</p> <p>The Commanding Officer of the Alaska Communication System is Colonel Fred P. Andrews, Signal Corps. Colonel Andrews first entered the Army in 1917 as a First Lieutenant in the Signal Corps, and his first association with the Alaska Communication System was during the period 1927-32 when he was in charge of</p>	<p>its Engineering Division. During that time, he was also in charge of operations of the U.S. Army Cableship 'Dellwood'. Colonel Andrews returned to the ACS in 1941 as its Commanding Officer, and remained so during WW II, retiring in 1946. He was recalled to active duty on 13 September, 1948.</p> <p>The installed plant, equipment, and general facilities available to the System to provide the required services are conservatively valued at \$12,000,000. These facilities include (1) a comprehensive radio network, which provides teletype service, overseas radiophone service, and the piping of live broadcasts from the United States to Alaska; (2) the submarine cable, extending essentially from Seattle to Ketchikan to Anchorage to Kodiak, with a leg from Ketchikan to Juneau, (this cable provides regular telegraph facilities and teletypewriter service); (3) a small cable ship for the installation and repair of submarine cable; (4) landline facilities provided over the wire lines along the Alcan Highway in conjunction with the Canadian Government, and (5) VHF facilities between Juneau, Haines and Skagway in Southeastern Alaska.</p> <p>ACS is providing for Alaska an integrated network of telephone and telegraph service which already offers to many localities in Alaska a service similar to a combination of AT&T and Western Union service offered the public in the U. S. This service is presently in the process of expansion to other communities in Alaska while at the same time, action is being taken to improve the dependability, quality and capacity of the existing main line circuits.</p> <p>The ACS continues to be closely associated with all the important events occurring in Alaska, and many of the ACS personnel feel that they have made individual contributions to these various events a few of which are listed here:</p> <p>August 16, 1935 -- Sgt Stanley R. Morgan, (presently Captain Morgan, OIC, Nome) an ACS man at the lonely Point Barrow ACS radio station, well within the Arctic Circle, on the aforementioned date, found the bodies of Will Rogers and Wiley Post and flashed that sad news to the world. For two days, Sgt Morgan wrote and transmitted articles to the world at large telling the story of the plane crash and recovery of the bodies of the famous comedian Will Rogers and his pilot Wiley Post. It was not until Morgan had first obtained a whaling boat and crew of natives and fought his way through the bitter Arctic weather and fields</p>	<p>of floating ice that he was able to recover the bodies so that they could be brought back to civilization.</p> <p>1937 -- ACS provided ground communications to Russian and American pioneering air flights over the North Pole regions</p> <p>October, 1946 -- ACS maintained ground contact with the 'Dreamboat' bomber flight all the way from Honolulu to Cairo.</p> <p>December 24, 1946 -- City telephone office at Fairbanks burned down. ACS provided emergency telephone service through their emergency telephone service through their Signal Corps switchboard to essential agencies in town, such as doctors, hospitals, fire department, etc., until local civic phone service could be put back into service.</p> <p>February, 1947 -- S/Sgt Elmer L. Jones, Operator in Charge of the ACS station at Valdez, Alaska, risked his life numerous times while rescuing patients from the Valdez Community Hospital which was completely destroyed by fire.</p> <p>On April 2, 1947, the ACS provided Alaska with their first commercial landline telephone service to the United States and Canada over ACS and Canadian facilities. The inaugural call on April 2 consisted of a telephone conference between the ACS Commanding Office (Col. T. J. Tully) at his office in Seattle; the Alaskan Delegate (E. L. Bartlett) at his office in Washington, D. C.; and the mayors of Seattle, Washington (William F. Devin); Portland, Oregon (F. Earl Riley); Anchorage, Alaska (Francis C. Bowden); and Fairbanks, Alaska (Hjalmer A. Nordale) at their respective offices. These six people talked to each other over an all-wire hook-up of more than 5,500 miles, believed to be the longest all-wire call on record.</p> <p>June, 1947 -- The ACS established ship-to-shore radiotelephone service for boats at sea in Alaskan waters.</p> <p>June, 1947 -- The ACS provided communications between their Anchorage station and members of the joint New England Museum of Natural History and University of Chicago expedition during their ascent of Mt. McKinley (operation Whitetower) near Anchorage, Alaska. Mt. McKinley is the highest point on the North American continent -- 20,300 feet above sea level. Highlighting the conquest of Mt. McKinley was a radiophone call via ACS facilities from Mr. Bradford Washburn, leader of the climbing expedition, atop the mountain to Seattle. The call was relayed from the top of the mountain to the ACS temporary station at the base of the mountain at Wonder Lake in</p>



1948 A.C.S. Celebrates its 48th Anniversary



1906-1907
LT. COL. GLASSFORD



1907-1911
COL. THOMPSON



1911-1913
MAJ. CARR



1913-1920
COL. LENOIR



1920-1922
LT. COL. SEONE



1922-1929
COL. HARTMAN



1929-1931
COL. GRIFFIN



1931-1933
LT. COL. OLMSTEAD



1933-1938
COL. KUMPE



1938-1940
MAJ. EDWARDS



COLONEL T. J. TULLY, Sig. C.
Commanding Officer
Alaska Communication System

ANNIVERSARY MESSAGE TO ACS PERSONNEL

ACS is forty-eight years old today.

During that forty-eight years the handful of early pioneers known as the WAMCATS has grown into a strong vigorous organization of nearly one thousand ACSers. The system has grown from the first twenty-four mile iron wire telegraph circuit on tripods over the muskeg of the Arctic circle to the present day modern communication system providing long distance telephone and high speed automatic telegraph via radio, submarine cable and wire lines—all of this over an area equal to approximately one-fourth the size of the USA.

The story of ACS is covered briefly elsewhere in the Bulletin. A reading and appreciation of the story—knowing the history of the ACS should make each one realize that he or she belongs to an unusual organization—one that has played a vital role in the development and daily life of Alaska—one that has played a major role in World War II Alaskan operations—one that plays a very constructive and active part in Alaska today. It is a story of a fine record built by the hard work and persistency of a fine group of individuals.

We should be proud that we belong to ACS. We should see to it that each of us, by his individual effort, contributes to the further buildup of the splendid ACS record.

FORMER COMMANDERS

ALASKA COMMUNICATON SYSTEM

(Continued from Page 15)

McKinley National Park, from there to the ACS Anchorage office and thence to Seattle by overseas radiophone circuit.

June 18, 1947 -- Pfc William K. Blades of the ACS station at Haines, Alaska, was the first to arrive at the scene of an electrical shock accident, and was outstanding in his untiring efforts to revive the youngster by means of artificial respiration.

August, 1947 -- During the record-breaking round-the-world flight by Bill Odom in the Reynolds Bombshell (A-26 Bomber) the ACS maintained a vigil over his radiophone frequencies from the time he departed Tokyo until he landed at Anchorage. The ACS station at Adak contacted and sent a message to the Bombshell while it was flying over the Aleutian Islands. It was the ACS officer at Adak who imparted the news to the world that Odom was over the Adak area on his way to Anchorage. Upon arrival at Anchorage, Odom called his wife over the ACS overseas radiophone circuit.

August 27, 1947 -- ACS operators at Anchorage and Seward sent out a rescue plane to La Touche, Alaska, (pronounced LaToosh) about 60 miles east of Seward to pick up a man with acute appendicitis. A radiophone call from the fishing village to the ACS station at Anchorage brought quick response to their pleas and a plane with pontoons was finally located in Seward by ACS personnel and dispatched to pick up the sick man. Four and one-half hours later, the patient was in the Seward Hospital being operated on, and he recovered very nicely, thanks to the timely assistance of the ACS.

During the past year, new projects and services included:

a. Responsibility for the Arctic Ionosphere Research Program.

b. Recently, live sustained broadcasts such as the World Series, the Jack Benny, and other, coast-to-coast programs, election returns, etc., started to be piped to Alaska broadcasting stations, thereby providing Alaskans with programs equal to those in the U.S.

c. Negotiations are under way to provide press service at a lower cost to the various newspapers and radio stations in the Territory.

d. It is contemplated that facsimile circuits will soon be opened to provide news wire-photos for the Alaskan newspapers.

e. In the planning stage is the rental from the Alaska Railroad of two metallic and carrier rights on four additional circuits connecting Anchorage, Fairbanks, Whittier and Seward, in order to handle civilian telephone business along the railroad. Formerly this telephone service was handled by the Alaska Railroad, a Government agency under the Department of the Interior. By the Alaska Communication System taking over this service, an over-all integrated long-distance communication system for Alaska will be effected.

The story of ACS, the story of communications in Alaska, can all be summarized briefly by two extracts from the remarks of Mr. 'Bob' Bartlett, Alaskan Delegate to Congress, when he appeared before the House of Representatives on March 21, 1948, and said:

'Since 1900 the Signal Corps has been part and parcel of the Alaska scene. First known as the WAMCATS, the agency is now designated as the Alaska Communication System. But whatever name it bears, it ranks high in the esteem of Alaskans and has played an important part in the development of the Territory. There civilian as well as military communications service is furnished by the Signal Corps. Nowhere, I venture to say, is there a closer community of interest than between the personnel of the ACS and the civilian residents of Alaska. There the military and civilian have lived in perfect harmony.'

It is interesting to note that at Point Barrow, Alaska, the Signal Corps established, in days long since passed, one of the first outlying stations of the weather reporting system. It is interesting also to recollect that General Billy Mitchell, great Air Force general, served as a first lieutenant in the WAMCATS. Alaskans -- and this description includes those of the ACS -- are proud to note that the training received on the system stood the Nation in good stead in World War I and

World War II. Experienced men from the system provided the foundation upon which the expanded signal organization of the wartime armies was built.'

'We in Alaska are proud of the Alaska Communication System and its accomplishments. As a training ground for the Signal Corps, and as the communication agency for all the Territory, the ACS has discharged its responsibilities in a manner which reflects credit upon the entire Army.'

This, in brief, is the story of the Alaska Communication System, forty-nine years old this month.

[1949] 36 YEARS AGO.



Ketchikan--First Point of Entry in Alaska



Barrow--ACS Northernmost Station

ANNIVERSARY GREETINGS - ACS

MATERIAL FROM BOTH 1948 AND 1949 BULLETINS CONSOLIDATED IN THIS ARTICLE



COLONEL FRED P. ANDREWS
Commanding Officer
Alaska Communication System

ANNIVERSARY GREETINGS

May 26, 1949 marks the 49th Anniversary of the Alaska Communication System and symbolically, the 49th Anniversary of electrical communications in Alaska. Throughout the 49 years this organization has maintained steady progress in the field of Arctic Communications and by so doing has contributed immeasurably to the effort of our government to develop the territory and increase its population.

I am extremely proud and privileged on this occasion to extend my heartiest thanks and best wishes to each and every member of the Alaska Communication System. Your devotion to duty, loyalty and ability has been outstanding and has enabled the System to continually expand and operate an efficient Communications network serving the great Alaskan Territory.



BRIGADIER GENERAL WILLIAM "BILLY" MITCHELL

General Mitchell resigned from the Army on February 1st, 1926. On March 27th, 1948 a special Medal of Honor was awarded posthumously to General Mitchell in recognition for 'outstanding pioneer service and foresight in the field of American Military Aviation.'

One of the officers on duty in the early days of the ACS was 1st Lieutenant William 'Billy' Mitchell, later General 'Billy' Mitchell, who so many years later was to cause such a furor in military circles with his astounding predictions on the importance of air power in warfare which were first scoffed at and later all too powerfully proved.

Lieutenant Mitchell, after returning to the United States from the tropics in April, 1901, was ordered to Alaska on August 4, 1901. While in Alaska, he served at Fort Egbert until September, 1901; at Fort St. Michael to October 1901; and Skagway and Eagle City to June 1903, in connection with the construction of a military telegraph line there. He returned to the United States in July, 1903.



LT. GENERAL NATHAN F. TWING
Commander-in-Chief
Alaskan Command

"As the Alaska Communication System approaches the half-century mark in its history, it is deserving of the highest approbation from the Territory and the people it serves. Seldom has any organization been assigned so difficult and complex a task, requiring as it does the simultaneous accomplishment of both military and civil communications functions. Never has any group performed such a mission more effectively.

"The Alaska Communication System may well be proud of having upheld its tradition of the military service. It gives me great pleasure to join the many others in offering heartiest congratulations."



BRIG. GEN. FRANK A. ARMSTRONG
CG Alaskan Air Command

"I am happy to extend to the Alaska Communication System on this, the occasion of your 49th anniversary, my heartfelt congratulations.

"This year, as in past years, the officers and men of your organization have worked diligently and unceasingly to improve the invaluable service rendered to both the military and civilian population of the Territory. The steady progress of your organization throughout the years working to overcome the vast obstacles presented by weather and terrain here in Alaska has been, and continues to be, one of the truly remarkable features in the development of the Territory."

CIVIL GREETINGS TO A.C.S.



EDWARD L. BARTLETT
Delegate to Congress from Alaska

The 49th anniversary of the Alaska Communication System is almost synonymous with Alaska's coming of age. It was pleasant indeed in the days of old when almost every Alaskan knew almost every member of the then WAMCATS by first name. But it is far more pleasant, and important, to know that as the A.C.S. observes its 49th anniversary, it is more adequately equipped with money, with personnel and plant to serve the communication needs of a country whose very size provides a challenge to the Signal Corps of the United States Army.

I have a pleasant personal recollection of the WAMCATS and the A.C.S. extending back to the early years of the century. As Delegate in Congress from Alaska, I have a most pleasant official recollection of an agency that has done, and is doing, so much for the betterment of Alaska.

As the A.C.S. swings down the home stretch to the first half century, my only wish is that in its span of life it is reaching only the first happy days of adolescence and will continue on and on in a relationship mutually profitable to the nation and Alaska. In my experience I have never known a government facility whose year-in and year-out association with the citizenry it served was happier or more felicitous.



ERNEST GRUENING
Governor of the Territory of Alaska

My congratulations to the Alaska Communication System on its 49th anniversary.

Through the years the Alaska Communication System has furnished Alaska with courteous and efficient communications. Its expanding service, tying in the outposts with the centers of population, has been instrumental in unifying the entire Territory. The more recent addition of the cable service in the Southeast, making it possible to communicate by telephone between the major cities of the Westward and Interior and Southeast Alaska as well as with the outside world, has been an outstanding achievement in furthering the progress and development of the Territory.

The announced plans of the Alaska Communication System in the next year to expand and improve its installations, thus affording a greater service to the people of Alaska, are highly commendable and have the earnest support of all Alaskans.

ACS RADIO STATION OF ALASKA



SEATTLE - WVD

Since 1900, and the origin of the Alaska Communication System, Seattle has been the headquarters for the vast operation which provides the people of Alaska their only communication between points in Alaska and to the United States.

The Seattle offices, located in the Federal Office Building, contain the Communication Center, through which funnels all traffic to and from Alaska, as well as various points all over the world. During World War II, military activities in Alaska placed a heavy traffic load on the ACS, and the wartime expansion can best be exemplified by the comparison of the communication traffic cleared through the Seattle station from the early months to the end of the war.

Early in 1941, the traffic load was 65,000 messages a month. There were only six radio telegraph circuits (three to Alaska and three to continental U. S. points) and one loop to a press service. With the exception of the loop which was teletype equipped, all of the circuits were manual, or semi-manual 'Boehme'. 'Through' messages, after being received, had to be re-transmitted manually by highly trained operators.

In January 1945, the load was 473,000 messages per month. The 59 circuits terminating in the office were all machine equipped by that time and communication business was sent on its way in a matter of seconds with modern semi-automatic equipment.

Since the war, instead of a decrease in traffic as might be imagined, the load has increased considerably. During January, February and March of 1949, a total of 2,214,000 messages were handled by the various ACS stations and this averages over 735,000 messages per month.

The Engineering and Construction Division is also located at the Headquarters in Seattle, and here major rehabilitation projects for existing plants are planned, equipment obtained, tested and modified to meet the rigors of Alaskan climatic conditions. Installation teams are trained here and later moved to the Alaskan area during the workable summer months to carry out these projects.

Just south of the metropolitan area of Seattle, at 4735 East Marginal Way, a large warehouse and supply depot is located, containing the thousands and thousands of parts and various supply items necessary for continuous communications and administrative operation of all stations.

Mr. Charles Murphy of Seattle, who served with the ACS from 1900 to 1946, at which time he retired from his colorful military career, recalls that the first location of the Seattle station was at the old Vancouver Barracks and installations were later moved into the Walker Building on University Street. When the Arcade Building was completed in 1905, the ACS offices were transferred there. During the year 1931, all of the equipment was installed in the present location, the Federal Office Building in downtown Seattle.

The Seattle offices also include the Detachment Headquarters where the flow of military personnel north and south through Seattle are processed, equipped, paid and assigned to various duties.

In addition to the military personnel, there are at present 160 civilian employees in the Seattle ACS including the 5 men permanently assigned to the ACS Cable Barge 'Lenoir'.



ANCHORAGE - WXE

The largest ACS station in Alaska is located at Anchorage. It is a major communication relay point serving a business area of 140,000 square miles (Illinois plus Minnesota) or about 25% of the Territory of Alaska; a region embracing rich mining properties and potentially great farming regions. The population of Anchorage itself has grown by leaps and bounds from an estimated 4,000 in 1940 to approximately 25,000 at present.

Located approximately midway between the Alaska Railroad terminals of Seward and Fairbanks, this 'cross road of the world' has become a 'boom-town.' Commercial enterprises together with military expansion has added a considerably heavy traffic load to the ACS - the latter has adjusted its facilities to meet the added responsibility.

Looking back to 1924, this station acted as a relay point from Fairbanks to Seward, thereby eliminating wire circuit. The original ACS office was located in the T&T building on the Alaska Railroad site, now occupied by the present Federal Building. In 1936 the total operations and city office were moved into leased space in the Odd Fellows Building.

During the spring and summer of 1937, WXE, Anchorage was in the limelight as one of the main points of contact by Russian Polar Fliers. This station was used during these flights to transmit periodic weather reports and make contacts with the fliers.

During this period, there was a total of 36 men on duty, with a Technical Sergeant as the operator in charge. In the fall of 1937, a commissioned officer was assigned to the Anchorage station. In 1941 the first effect of the impending war was felt by increased activity in Anchorage, and Fort Richardson was opened at that time.

With the arrival of the Alaska Defense Command, additional stations were constructed in the Territory which increased the circuits, and traffic over WXE jumped in volume. The force on duty increased to over 250 men in operations and maintenance alone.

In the fall of 1944, completion of the transfer of equipment from the transmitter station at Whitney to a new location furnished greatly increased facilities and improved transmission and reception conditions.

Anchorage is often termed 'The Chicago of Alaska.' It is the air terminal for planes going as far west as the Orient, including the South Pacific and Aleutian Islands, in addition to the heavy Intra-Alaska travel.



Operating Room - WXE - Anchorage



FAIRBANKS - WXP

Fairbanks, now the second largest city in Alaska, with a population of approximately 8,000, is situated in the geographical center of the Territory. It is the Northern terminus of the Alaska Railroad, the Richardson Highway, and the Alaska Military Highway which connects Fairbanks with the States. To the Northwest runs the Steese Highway, thence to Circle City on the Yukon River.

On November 11, 1903, the ACS opened for business in the then frontier town of Fairbanks. The System consisted of one wire running to Valdez. Telegrams were transmitted by the old, and now practically obsolete, Morse code between these two points and from Valdez to points in Southeastern Alaska and Seattle via submarine cable.

As radio communication improved, it gradually supplanted the wire circuits until at the beginning of World War II, the only wire circuit used was one Alaska Railroad circuit between Fairbanks and Anchorage.

During World War II, a 'C' carrier telephone line was built by the ACS connecting Edmonton, Alberta, Canada, with Fairbanks; a 'C' carrier was installed on one Alaska Railroad pair to Anchorage furnishing carrier controlled voice and telegraph circuits to the States.

The part of the Alcan telephone line located in Canada was transferred to the Canadians in the early part of 1946, the ACS retaining 298 miles on the Alaska side of the Alaska-Yukon Territory boundary. There is a total of 21 repeater stations located between Edmonton and Fairbanks, a distance of 1922 miles. Three of these stations are Big Delta, Cathedral Bluffs, and Northway.

Here again it was thought that after the war, a decrease in communications requirements might take place, but such was not the case. Rather, an increase over wartime needs became evident.

The ACS in conjunction with the Office of the Chief Signal Officer, the Canadian Government and commercial communication firms in Canada, obtained the use of landline telephone and telegraph facilities through Canada, thereby providing Alaska with an all landline hookup from Fairbanks to the States.

The local Army Airbase, Ladd Field, commenced a large building program to increase its present facilities. Also construction on the large airfield was started at mile 23 as well as expansion of present airfields at Big Delta and Northway. All of these activities and many more now, have brought more military and civilian personnel to Fairbanks and caused the enlargement of commercial firms or commencement of new ones. This had a direct bearing on the increase of traffic, both telegraphic and telephone, handled by the ACS at Fairbanks.



Aerial View - Fairbanks

ACS MOTTO:

'GET THE MESSAGE THROUGH'

(Continued from Page 18)



ADAK - WXFG

Prior to 1942, Adak was a desolate, uninhabited island of the Aleutian Chain. The war with Japan brought occupation and fortification of the island by U. S. Army forces.

During the early months of the war against Japan, a U. S. Task Force landed on Atka and Adak to prepare for the recapture of Attu and Kiska in the Aleutian Islands.

On August 30th, 1942, an ACS task force led by Lt. Lawrence S. Parker landed on Adak and established communication facilities. Their equipment consisted mainly of one Hallicrafter SX-25, one hand key, one microphone, a bug and a small power plant. In February 1943, Sgt., now CWO William L. Miller arrived with 36 enlisted men to construct permanent installations. In February 1945, over 325 ACS Officers and enlisted men were stationed at Adak.

Since the war, Adak has continued to be a main outpost of American defense and many troops are stationed here. For the convenience of these servicemen and for the transmission of official military traffic, the ACS provides a modern communication telephone and telegraph service.

There are no civilian business enterprises on the island of Adak. All concessions, including barber shops and beauty shops are under Army or Navy control. There is no commercial fishing, mining, agriculture or fur farming on the island. All civilians here are employees of the Government, civilian contractors, or are members of servicemen's families.

Adak has been called the weather kitchen of the world due to the quantity and quality manufactured here. Williwaws, storms of tremendous proportions are common.



BARROW - WXB

Barrow is our northernmost village on the North American continent. Located approximately 500 miles northeast of Nome and 500 miles northwest of Fairbanks, it lies 330 miles north of the Arctic Circle. It is also the largest and most prosperous Eskimo village in Alaska.

Barrow became better known through many Arctic explorers using this village for an exploration base. This little town has greeted many famous explorers starting with Captain Beechey in 1826 down to Stefansson and Wilkins in more recent times. In 1826, Captain Beechey named the village Point Barrow after Sir John Barrow, a great patron of exploration.

The ACS station was first opened on June 13, 1938 by Sgt. (now Captain) Stanley R. Morgan who presently is the Officer in Charge at Nome.

Barrow is an important weather observation post and a large portion of the ACS traffic consists of reports of the Weather Bureau.

Inasmuch as this outpost is icebound eleven months of the year, all supplies not flown in by plane must be freighted by the steamer arriving in August.



BIG DELTA

The ACS Repeater station at Big Delta first opened its doors for business on 15 October, 1943. At this time the circuits were strictly for military traffic, but on 2 April, 1947, the Alcan Telephone and Telegraph lines, a \$10,000,000 war-time project, were opened to the public for commercial service between Alaska, Canada and the United States.

The Repeater Station is a one-story frame building founded on tundra, located approximately 97.6 miles south of Fairbanks. The station operates 24 hours per day, 365 days per year, and requires a total of 8 military personnel.

It is one of the first repeater points for a large network of ACS operations in the Interior of Alaska, and provides local and long distance telephone and telegraph service between many of these stations and the city of Fairbanks, Canada and the United States. Radiotelephone service can also be had through the Anchorage Sector to any point in the United States.

ACS facilities consists essentially of a Repeater as well as a terminal for voice frequency telegraph and long distance telephone traffic within the Territory, Canada and the United States. Approximately 500 messages, and telephone calls are handled by this station each month.



BETHEL

Chiefly a native village, located on the Kuskokwim River in the lower western part of Alaska, Bethel principally survives on its trapping and mining activities.

The country surrounding Bethel is flat open Tundra country. The town was established immediately on the river bank and owing to the raging storms and floods, its bank is constantly being washed away. The site at which Bethel was originally established is now the main river bed.

There are about 400 natives of the Eskimo tribe and about 50 white persons in the Bethel settlement, the latter including the CAA personnel at the CAA airport across the river.

Anchorage is the closest point of civilization, 300 air-miles distant, with the only means of transportation being dog-team or airplane during the winter months.

Temperatures range from zero to 55 below in winter with high winds. Heavy rainfall with cool temperatures are on the weather menu during the 'summer' months. Hordes of mosquitoes invade the territory during the rainy season.

ACS communication equipment consists of high and low frequency transmission being equipped for either CW or radiophone. Phone stations serve private mining operations and the Bureau of Indian Affairs.



CATHEDRAL BLUFFS

Early in 1943, this ACS Repeater Station became one of the important links for all land-line communications to Canada and the United States.

The station is a one-story wood type bldg., located 191 miles south and east of Fairbanks on the Alaska Highway. It is midway between Big Delta and Northway repeater stations. The Alaska Mountain range rises above the station on the south and the Tanana River is a few hundred yards on the North.

This ACS repeater station operates 24 hours a day, and has a station complement of seven men. Direct telephone and telegraph communications are available to Northway, Big Delta and Fairbanks.

Long distance telephone and telegraph services to the United States, Canada and other points in Alaska are also available, and about 100 telegraph messages and 100 telephone calls are handled by the station each month.

At the present time, three sets of family quarters and one set of bachelor quarters are maintained for ACS personnel.

This station serves the various Federal and Territorial agencies, commercial concerns and public service generally. In addition, Telegraphic Money Order service is available.

Excellent hunting and fishing may be found in the area surrounding Cathedral Bluffs.



COLD BAY - WXFP

Cold Bay is about 650 miles from Anchorage, Alaska, on the extreme tip of the Alaskan Peninsula. Although it is actually continuous with the Alaskan Mainland, it is usually considered a part of the Aleutian Island Chain which stretches out from it to the west.

The bay itself empties into the North Pacific in the south and into the Bering Sea in the North.

The climate of the region is comparable to that for which the Aleutians are noted. When a gale is raging, when the temperature drops and the snow begins to blow and drift, the climate is practically unlivable. Winds of 100 m.p.h. and higher are often recorded--winds of 60 to 70 m.p.h. are common.

On the islands surrounding the tip of the peninsula, and on the mainland itself, there are numerous villages, many of which are served by the ACS. Fishing, canning and trapping are the main occupations of the villagers.

Several hundred miles to the north in the Bering Sea are the Pribilof Islands, famous for fishing, fox trapping and especially sealing.

The ACS station at Cold Bay is located on the Thornbrough Air Force Base. The original ACS station opened on 30 March, 1942, and was one of the first three Aleutian communication links in operation during the westward movement in the late war.

(Continued on Page 20)

ALASKA - Vast Land of Pristine Beauty,



CRAIG - WXO

Shortly after the termination of the first World War, the ACS, in order to better serve Alaska and the surrounding territory, installed communication equipment at Craig, on the west coast of Prince of Wales Island. The initial date of service from there was January 24, 1918.

The present location of the ACS station is in a very substantial two-story log building where comfortable living quarters are also occupied. U.S. Engineers completely renovated the building in the spring of 1947.

Craig is a one-man operated station except for two months out of the year while the fishing season is at peak in the surrounding waters. During that time, an additional man is allotted and one radiophone relay operated. At the present time traffic from Craig is cleared through Ketchikan.

Klawock, the birthplace of the Alaska salmon canning industry, is located six miles north and traffic is cleared by landline telephone.

Prince of Wales Island is estimated to contain some of the best pulpwood stands in Southeastern Alaska, and it is anticipated that a great amount of logging activity for this purpose will soon commence. As pulp mills planned or under construction at Ketchikan and Petersburg get under way, several concerns plan to start logging operations in this area. Western Hemlock, Sitka Spruce and Alaska Cedar constitute 99 percent of the standing timber.



FLAT - WXL

Opening for business on 1 September, 1931, the ACS station at Flat survives principally because of its proximity to the gold fields.

In 1909 this area was the stage of a spectacular 'gold strike' and millions of dollars in gold have been mined from its soil. Some \$250,000 in gold is still produced annually.

Flat is located in the interior of Alaska, 280 miles (air miles) northwest of Anchorage, Alaska, and the present population is estimated at 100.

Climatic conditions vary considerably. Winter temperature averages from 30 to 40 degrees below zero and it is recorded that during January 1947 the thermometer dropped to 62 degrees below zero.

The normal summer population of Flat is about 200 with the winter population dropping to about 100.

In addition to mining operations here, white, red and silver fox, muskrat, mink, marten and lynx are trapped for the market.

At present the ACS station here is manned by one non-commissioned officer in a combined operating and living quarters arrangement. Since no doctor exists in Flat, the ACS is the only means of contacting medical help in other communities.

These emergencies, and being the only means of communication for this village, is the mission of the ACS in Flat.



JUNEAU - WXA

Juneau, the Capital of Alaska, is located on the Gastineau Channel, 897 air-miles northwest of Seattle, Washington, and has at present a population of approximately 7,500. Directly across the Gastineau Channel, and connected by a steel bridge, is Douglas Island where many Juneau residents have settled and from which they commute daily by automobile.

In addition to being the seat of the Territorial Government, Juneau is also headquarters for most of the Federal Agencies operating in Alaska. In 1931 the \$1,000,000 six story Federal Building was erected, and the ACS occupies about one-half the first floor.

Juneau is one of the largest and most important ACS stations in Alaska. The Juneau station has been in operation since August 23rd 1903, and has kept pace with the rapid growth of the territory it serves.

The biggest development in ACS history at Juneau in recent years was the rehabilitation of the Juneau-Skagway submarine cable which later led to installation of a voice frequency carrier of two channels, linking Juneau and the interior of Alaska to the U.S.

The first complete landline telephone communication, a six-channel telegraph carrier, was then installed on the secondary channel giving Juneau a good land line communication with the interior of Alaska by way of Fairbanks and Anchorage. Prior to this, radio was used but was not considered entirely successful.



CORDOVA - WXU

Cordova is located on Prince William Sound about 1600 miles via steamer from Seattle. The Kennecott mine in this area has produced over \$100,000,000 of copper ore.

In 1911 the Copper River and Northwestern Railroad, at a cost of \$23,500,000 completed the laying of rails between Cordova and Chitina a distance of 131 miles, and a branch line of 65 miles from Chitina to Kennecott.

The construction of this railroad was an engineering feat which probably has never been equaled elsewhere for it encountered a number of moving glaciers along this route. The roadbed will always remain as a historical feature of the region. Rex Beach describes the building of this road in his book 'The Iron Trail'.

Approximately 1200 people live in this community where the primary industry is fishing. Twelve canneries in the area pack an average of 570,000 cases of canned salmon every year. Other canneries here, pack clams and crab.

Placed in operation in August 1908, the ACS has provided communication service in Cordova for over 40 years and present facilities include radio-teletype with Anchorage, marine radio guard, ship-shore radiotelephone service for small craft and two outlying point to point contacts.

This station is considered a very desirable duty assignment due to the friendly atmosphere found here, the comparatively mild climate, and the superb sport fishing and hunting.



HAINES - WXV

Haines was the site of the only Army post in Alaska prior to World War II. Chilkoot Barracks here with its mere handful of soldiers represented the sole military protection of the Territory.

The village of Haines is located in the upper end of Lynn Canal between Juneau and Skagway and was founded principally, by missionaries and gold miners in the 1870's. The population is estimated at 375.

ACS service was first available here in July, 1903. In 1947 very high frequency installations linking Juneau and Haines were put into operation. This radio circuit is in continuous operation. Haines acts as a repeater station and relays the telephone and telegraph signals to Skagway where facilities of the Alcan carrier telephone and telegraph lines to Fairbanks and the States are available.

In addition to this radio link, Haines has three submarine cables, two to Skagway and one to Juneau.

Haines is the coastal terminus of the Haines Cut-Off Highway, a newly constructed gravelled road extending through the Chilkat Valley to the Canadian boundary, thence through British Columbia and the Yukon Territory to a junction with the Alaska Highway at a point 99 miles west of Whitehorse, Y.T.



KETCHIKAN - KXH

Ketchikan, Alaska's 'first city', 662 miles north of Seattle, Washington, is built on the southeastern shore of Revillagigedo Island in southeastern Alaska, overlooking Tongass Narrows. Nestled as it is against rocky evergreen hillsides, spread for miles along the waterfront, the setting is pleasantly picturesque. Homes built on the hillsides command a spectacular view of sea, islands and waterfront activities.

With a present population of about 6,000, Ketchikan is the trading center for approximately 10,000 persons in the adjacent area. The fishing industries bring an additional 1000 workers for the summer season.

The ACS station was established on Sept 1st, 1924, and has rendered a valuable service to this portion of Alaska.

Ketchikan, a thriving city with all modern conveniences, is the first point of entry for vessels entering Alaska from the south, via the Inside Passage. It has one of the most modern sawmills on the Pacific Coast and is headquarters for the logging industry in that area. It is also the center of a highly mineralized area noted for its gold, copper, marble and other minerals.

The city is also famous as a fishing center, and it is said that more salmon is canned here than in any other city in the world. There are large cold storage plants which have built up a prosperous fresh fish industry.

Majestic Mountains, Legendary Rivers



KODIAK - WXF

The city of Kodiak has the distinction of being the oldest town in Alaska, having been founded by the Russians early in their colonization attempts and was used as their central base of operations until they had established their capitol in Sitka sometime later. The Russian influence is still very evident in this city, and there are a few ancient buildings denoting that influence, particularly the Russian Orthodox Church.

The city of Kodiak is the center of operations on Kodiak Island. Its thousands of harbors, inlets and bays abounding with fish are responsible for the many canneries and packing plants being established at points around the island.

The ACS is an essential element in establishing and maintaining communications between these isolated canneries and the outside world, in addition to serving the city's population and the personnel of a large naval base and naval air station.

The ACS offices and operating room are situated in the bank building near the center of town.

Ten years ago OW was the principal means of clearing traffic, whereas today OW is the last resort and is used only when signals are too poor and cable failure renders all other means inadequate. Telegraph service is now carried on by cable teletype, although radiophone is sometimes used during cable failure. Radiotelephone is another connecting link between Kodiak, Anchorage and Seattle.



KOTZEBUE - WXW

The village of Kotzebue is located about 25 miles above the Arctic Circle in the upper region of Kozebue Sound in Northwestern Alaska. Its population is approximately 400, principally Eskimo or of Eskimo extraction.

Very little is known of the early history of this village. Previous to 1898 there existed only a small hunting and fishing camp, occupied during the summer months by Eskimo hunters and their families from the few scattered inland villages.

The discovery of gold on the Nome beaches was primarily responsible for the settlement of the present village of Kotzebue. It was the gold obtained from the famous Bessie Bench mining claims at Nome that financed the first commercial trading venture into the area.

Kotzebue's chief industry is trading supplies for, and the buying of furs. Centrally located in an area noted for its abundance of fur bearing animals, this little community thrives only because of this industry. Furs valued from \$50,000 to \$100,000 flow through its trading post each year.

In this village, one can observe the customs and activities of the Eskimo people. Many of the Eskimos of this region still live in sod and mud-covered igloos and hunt in skin covered umiaks or boats as did their forefathers many years ago.

The ACS opened their station here on 27 July 1924. This is another outpost of the vast ACS system of communication in Alaska.



NAKNEK AIR BASE - WXFJ

During the early years of the war, an airbase was constructed at Naknek to serve the needs of the U. S. Armed Forces.

The ACS established a station on the base in July, 1942, and it serves not only the airbase, but also the major portion of the Bristol Bay area with both government and commercial communication for both fixed stations and ships.

The Bristol Bay area is noted for its salmon canning activities. Each cannery has its own radio station and works through the Naknek Airbase. Besides the canneries, several government agencies work through this station, such as the Bureau of Indian Affairs and the Fish and Wildlife Service. Communication with these stations is accomplished mainly by radio-telephone and some by radio telegraph. Telegraph traffic from the airbase and from outlying stations is cleared through Anchorage for further transmission to destination.

Naknek Village is located about 18 miles from the airbase. An open wire telephone line strung on tripods is maintained between these two points. An ACS branch office is maintained at the village to serve the public there.

No roads of any type exist in this part of the Territory and the land mass is composed mainly of tundra and muskeg.

The climate in this area is changeable, with the mercury varying between 60 degrees in the heat of summer and 50 degrees below zero in winter. Precipitation is high the year around, but high winds during the winter prevent much snow from accumulating at Naknek Airbase.



WXY - NOME

Nome, 2373 miles north of Seattle, boasts a population of approximately 1600, and is the supply and service center for most of the mining operations on the Seward Peninsula.

This community came into being as a tent town with the discovery of gold on its beaches in 1899. This startling news flashed around the world and the resulting stampede brought 40,000 people into Nome to share in this discovery.

The ACS in Nome has the distinction of being the first wireless station in the world to handle commercial messages. The first message was transmitted from Safety, a short distance south of Nome, to St. Michael in the fall of 1903.

At the turn of the 20th century, dog teams were the only means of communication that Nome had with the outer world until the entrance of ACS service.

In the early 30's, Nome radios participated in the rescue of 102 Russians who were afloat on an ice floe after their ship had been crushed and sunk.

It is still possible for even the inexperienced to pan gold from the Nome beach. Tourists will find little change from the goldrush days. Gone perhaps are most of the famous characters of yesteryear; the Dan McGrew's and the dance hall girls are but memories. In their place are pioneer people who go out of their way to make a tourist's sojourn in Nome most enjoyable.



NORTHWAY

In November 1943, permanent lines and services were completed and put into operation at this ACS repeater station which is the third station out of Fairbanks on the Alcan Landline.

The ACS controls the Alcan Landline as far as the Yukon-Alaska boundary and since Northway is just 40 miles west of this border, it is the last ACS station on the landline. The remainder of the system located in Canada is operated by the Canadian National Telephone System.

Northway repeater station is operated 24 hours a day, and 365 days a year with a complement of seven men.

Direct telephone and telegraph circuits are maintained to all other Alcan stations in addition to repeated circuits to the United States.

In addition, an intercom system is maintained to CAA from Northway to Fairbanks with a tie-in at Tanacross and Big Delta, and an intercom from Whitehorse to Northway ties in at intermediate bases.

All these circuits are terminated at the Northway station in a switching arrangement. Two teletype circuits are also provided for the CAA. All Alcan circuits are repeated at this point for service between Alaska and the United States.



PETERSBURG - WXQ

The 'Wamcats' radio station at Petersburg was officially placed in operation in 1909. Equipment consisted of a two KW Rotney arc transmitter and associated equipment and only one man assigned.

In 1918 this equipment was replaced by submarine cables routed to Ketchikan, Wrangell, Juneau and Sitka. Equipped with modern transmitting and receiving equipment (leased from the British government and installed by British engineers) Petersburg became the relay point for Ketchikan, Wrangell and Juneau to Sitka.

Because of the high maintenance expense involved, the cable was abandoned in 1929 and replaced by radio-telephone equipment. Some difficulty was encountered during the initial change-over and it became necessary to reopen the cable for about six months while awaiting new equipment. Again in 1942 the cables were placed in operation and a simplex cable-telegraph circuit used with Petersburg as the main relay station. This system was later replaced by a simplex teletype circuit which then permitted direct communication between Juneau and Ketchikan with Petersburg as a repeater station.

Direct telephone communication between Petersburg and Wrangell was restored in 1946 and line amplifying and terminal equipment installed.

A marine-radiotelephone service was inaugurated during the summer of 1947, making possible ship-to-shore communication service.

Totems, Northern Lights, Gold, Salmon



SEWARD - WXR

Seward, located on Resurrection Bay on the south coast of Kenai Peninsula, is the northern terminus of steamers from Seattle to southwestern Alaska and is also the starting point for steamship service to all ports along the Alaska Peninsula as far as Unalaska in the Aleutian Islands.

The pioneer city is also a supply point for quartz and placer mines of the Kenai Peninsula and has a valuable fishing industry. The surrounding country is unsurpassed in scenic beauty.

The ACS station at Seward was established on October 5th, 1905, five years after the system was brought into being, and in 1927 became headquarters for ACS in Alaska.

The present ACS office is located in the Federal Building, having been moved in 1922 from the Griffith house, an old established landmark which is now used as city living quarters for the station personnel.

In late 1942 the ACS facilities at Seward consisted mainly of the cable terminal and mux relay point for the Seward-Ketchikan ocean cable, landline to Anchorage and stand by radio. During the period from January 1943 to June 1944, several small projects were initiated and completed. Among these was a radio net to provide communication between the various construction camps, harbor craft installations, extensions and repairs on the Post telephone system and reinstallation of ACS station equipment to serve the ATS and the government agencies remaining at Seward.



SITKA - WXC

Sitka was the Russian capitol of the Territory and was the site of the actual transfer of Alaska from Russia to the United States in 1867. It remained the capitol until 1900.

Since the day of its founding in 1804, Yankee, French and English sea captains referred to Sitka as the 'Paris of the Pacific.'

This growing community of 3600 is situated on Baranof Island and 850 air-miles northwest of Seattle.

During World War II, a large military base and naval air station was built at Sitka and the increased volume of business caused the ACS station here to increase its complement to one officer and 25 enlisted men.

After the war the staff was reduced again to three enlisted men. In 1946 and 1947, timed wire press and long distance radio-telephone service came into being and a total of six men were assigned to the station. Also in 1947, acquisition of a remote receiver station was made which was about two miles from the main business district on Japonski Island.

Government quarters are furnished for the station's Operator in Charge and the technician. The rest of the enlisted men have secured quarters for themselves.

The fishing industry mainly supports the town of Sitka with two canneries, and also the Sitka Cold Storage which handles about five million pounds of seafood per year.

In a matter of minutes after leaving home, one may be casting for trout in a mountain stream or fresh water lake, trolling in the Sound with sport tackle for salmon, hunting ducks and geese or the Sitka Black Tail Deer.



UNALASKA - WXFO

Unalaska village is located on an island of the same name in the Aleutian Chain. A survey bench marker near the center of the village indicates that the 167th meridian west of Greenwich passes through there. One of the Fox Island group, Unalaska is about 82 miles in length.

The whaling village here is one of the oldest continuously inhabited white settlements in Alaska, having been occupied by the Russians in 1875. An old Russian Church and other evidence of the Asiatic influence upon the villagers still remain.

At the outbreak of the last war, most of the population of 356 were evacuated and Fort Mears was established. In June, 1942, Fort Mears and the Naval Base of Dutch Harbor, across the bay, withstood Japanese air attack.

Unalaska today is one of Alaska's twenty-four incorporated cities and towns. The population of some 150 persons is mostly native; the village is the farthest west civilian settlement in the Aleutians and serves as a supply point, trading and shipping point for the vicinity.

The ACS station here, was originally opened 10 April, 1942 inside the Fort Mears reservation about one mile from the town of Unalaska, with a staff of 8 men. At the peak of operations this station required 150 men.



SHEMYA - WXFT

On a pin point island in the North Pacific named Shemya, an ACS station was activated and opened for communication traffic on October 21, 1943. Although the island is but two miles wide and four miles long, about 8000 servicemen of the various branches were stationed there during World War II.

Thirty-five miles to the west can be seen the island of Attu, westernmost point of the Territory of Alaska. It was on that island that the battle of the Aleutians was culminated by recapture from the Japanese in the Spring of 1943.

At the peak of operations the ACS strength on Shemya went up to nearly 100 personnel including the signal installation teams attached.

The ACS occupied the highest point on the island on the north central portion, 200 feet above sea level.

Army engineers also constructed a modern airbase on the island during the early months of hostilities. During the latter months of the emergency, and after the end of the war, plans were formulated for permanent installation to make the base an important communication link in the Aleutian chain of islands.

Shemya is a regular crew change and refueling stop for Northwest Airlines on their Orient flight.

The temperature on Shemya varies very little by seasons. In the Summer, it averages around 40 degrees above zero, and in the Winter around 25 degrees above zero.



SKAGWAY - WXS

Skagway is located at the head of Lynn Canal, is the port of entry into Canada and is the gateway to the upper Yukon country and has a population of 750. Skagway is also a shipping center and supply point for the Yukon and Klondike districts.

The town was established early in 1897, and during the gold rush days, it had a population of nearly 20,000 people. This is a colorful village -- one of the most interesting stops on the tourist route through southeastern Alaska.

The ACS station at Skagway was one of the first established by the Signal Corps having its origin August 23rd, 1901.

It is said that the first public communication facility in Skagway was opened by the well known Jefferson (Soapy) Smith. He apparently had a short length of submarine cable and crude assortment of telegraphic instruments, and dispatched his gold rush messages at one dollar per word.

The White Pass and Yukon Railway, started in 1898 and completed in 1900, connects Skagway and Whitehorse, Y.T., 117 miles to the north. During the summer months thousands of tourists make the round trip and are invariably thrilled by the magnificent scenery encountered on this International trip.



UMNAK - WXFN

This island, located approximately midway along the Aleutian Chain, 40 miles west of Dutch Harbor, is of volcanic origin and is approximately 60 miles in length and 15 miles wide.

Cape Air Force Base is maintained as an auxiliary air field and refueling base for aircraft flying the Aleutian Chain. This base is used by both civilian and military craft. The Army Airways Communication Service maintains a detachment for the purpose of providing weather data and navigational aids for aircraft.

One of the world's most perfect craters is located on Umnak with Mount Tulic at the southeast rim of the crater rising 4,103 feet above sea level.

The ACS station at Umnak (formerly Fort Glenn) is located at Cape Air Force Base on the southeast end of the island.

On 30 March, 1942, the ACS opened a station here during the early stages of the war in the Pacific. At one time a total of 60 men were necessary to maintain this station.

In June, 1946, the ACS office and facilities were consolidated with the Army Airways Communication Service and moved to Birchwood Hangar on the air base.

Wamcats, Moose, Sour-doughs, Eskimos



VALDEZ - WXJ

The Spanish navigator, Fidalgo, explored the upper reaches of Prince William Sound in 1797 and named the most northerly arm of this sound 'Puerto de Valdez'. Prospectors, in the year 1898, eager to find the shortest land route to the gold fields of interior Alaska, beached at the head of the arm, founded a tent city, and named their community 'Valdez'.

Valdez is about 1600 miles by direct steamer from Seattle and is the coast terminus of the Richardson Highway, which connects with the Alaska Railroad and the Steese Highway to the Yukon at Fairbanks. Richardson Highway is open for travel from June 15th until October 15th, during which period motor buses, freight vans and trucks operate regularly between Valdez and the Interior.

Valdez has the distinction of having been Alaska Headquarters for the ACS from its inception until 1927. One of the first cables to be laid in Alaskan waters was from Sitka to Valdez, which was completed in 1904.

Within the Valdez district boundaries are 5 salmon canneries, 3 cold storage plants, 6 potentially producing gold mines, several salt-eries, 6 fur farms, 1 lumber mill and 4 logging camps. These concerns, while not immediately located within the town of Valdez, are nearby and considered commercially tributary to the town itself.

The ACS station in Valdez was first opened in October 1900, a truly pioneer ACS installation.



WRANGELL - WXG

This ACS station had its origin on December 21st, 1906, and has been in continuous service throughout the years. As with other early-day stations pioneering in the communication field, many significant incidents have occurred there.

Wrangell, second oldest town in Alaska, is located on an island of the same name in South-eastern Alaska, 736 miles north of Seattle.

First discovered by the Russians in 1833, who named the location Fort Dionysius, later it was changed to Fort Wrangell after the U. S. purchased Alaska from the Russians.

Wrangell has gone through three 'boom' stages. The first was during the Russian regime following the discovery of gold along the Stikine River in 1861. The second took place a few years after the United States purchased Alaska, when many prospectors arrived in Wrangell enroute to the newly discovered gold fields in the Cassiar District. The third occurred during the Klondike gold rush of 1898, when thousands of gold-seekers poured into Wrangell hoping to reach the rich gold discoveries via the Stikine River and over the Teslin Trail. Wrangell then became a bustling city of several thousand inhabitants, many living in tents.

M/Sgt Einer Theusen, with over 30 years service in the Army, 28 of these years with the ACS is the operator in charge of this station.



CABLE BARGE "LENOIR"

Plying through the North Pacific waters from Seattle to various Alaskan outlets is the ACS Cable Barge 'Lenoir', a project of considerable importance to the proper functioning of the Alaska Communication System.

Assigned the difficult task of performing duties of installation and repair, laying and repairing cables in the harbors and inshores of Alaska, the 'Lenoir' also carries commissary goods to the coastal stations at great price-saving benefits for station personnel.

The 'Lenoir' was launched at her Seattle Berth on April 29, 1944, and was sponsored by Mrs. Basil O. Lenoir, widow of the late Colonel Lenoir, in whose honor the barge was officially named. Colonel Lenoir was formerly commanding officer of the Alaska Communication System, and served in that capacity during the years from 1913 to 1920.

The maiden voyage of the 'Lenoir' was made to Adak, Alaska, and she departed from Seattle on September 2, 1944, with Lt. Lauris S. Parker as the officer in charge.

From October 1941 to December 1944, the ACS has used six different barges for the numerous services rendered to ACS stations in the Alaska Territory.

These barges were the 'Restorer', the 'Brico', the 'Dellwood', the 'Silverado', the 'Glassford' and the present 'Lenoir'. Nineteen voyages were completed during that period.



WHITTIER - WXFM

Whittier, a location rather than a community, is approximately 60 railroad miles south of Anchorage. Its mainstay is an Army Post maintained for the purpose of handling Army freight destined for the interior of Alaska.

The only permanent civilian population consists of Alaska Railroad and Union Oil Company personnel.

On February 1, 1943, when work began on the two tunnels from Morraine to Portage Bay, the first ACS operations began. Personnel first lived and operated in tents, later moving into huts. In 1944, operations were moved into the only concrete building in the camp.

Weather is Whittier's principal drawback being extremely wet, cold and windy. Snowfall is exceptionally heavy, being estimated at an annual thirty feet.

Whittier is strictly a 'war baby' but its docking facilities in a good harbor, together with its railroad connecting service, could make Whittier one of Alaska's most prominent cities some day. As a matter of fact, considerable interest has been shown in the mapping of the area for possible location of a town site, and many Alaskans are interested in the future of this location.

The present complement of enlisted men at this station now have family-type apartments in the operations building, and wives and families of the men have joined them there, somewhat eliminating the isolation and lack of civilian community activity.



YAKUTAT - WXD

In the early part of 1941, the ACS station at Yakutat, spurred on by the war emergency and the construction of an army post and an airfield, opened up as a communication center and grew to considerable size and importance within a short time. From this beginning has emerged the present permanent link in the ACS.

Yakutat (recently incorporated a city for the first time) was founded by the Russian Count Baranof in 1797, who left a small contingent of men in a stockade and continued southward. When he returned the following year, he found the total complement wiped out by warring tribesmen. The native tribesmen had roamed the vicinity for many years, fishing in the summer, trapping during the winter, moving with the seasons as they still do to a small extent.

The station is located in Monti Bay, better known as Yakutat Bay. The town is sheltered from the waters of the Gulf of Alaska by Ocean Cape. The population is approximately 130, including the Old Village which is comprised of about 10 families. The Old Village lies 1-1/2 miles north of Yakutat and is far more sheltered.

The station has recently been brought 'up to date' with new equipment and a new office. ACS headquarters was transferred from the transmitter station to the new message center in the CAA hangar. From this location, transmitters are operated by remote control and a teletype circuit to Yakutat Village, about four miles away, provides improved service.



HEALY

The ACS stations at Healy (located approximately 224 miles north of Anchorage) and Curry, (134 miles north of Anchorage) are primarily repeater stations for ACS operated carrier channels along the Alaska Railroad owned wire line between Anchorage and Fairbanks. No communication circuits are available between these stations and other ACS stations or non-ACS stations for the handling of either telegraph or telephone messages. Such traffic when offered is handled over channels operated and controlled by the Alaska Railroad.

The ACS does not own buildings at either of these localities for the housing of equipment or personnel. Space for equipment and repeater attendants is obtained from the Alaska Railroad in the AHR hotels at Curry and Healy.

CURRY



A Little Levity with A.C.S. Longevity

ALASKA'S BIGGEST LIAR "SOUNDS OFF"

Berman M. Rinear of Fairbanks, tagged as Alaska's biggest liar, won his title by telling the following tale entitled, "Moose Creek Charley and the Quick Freeze":

"During the quick freeze that Charley told me about", he said, telling of parts in his prize winner, "the temperature dropped so fast that the momentum of the falling mercury pulled all the thermometers from their fastenings."

"At Fairbanks the Alaska Railroad's heating plant had full steam up. In 30 seconds the pipes froze and the steam was sawed up and used for cord wood, but the logs were so superheated two locomotives took off like airplanes and disappeared into the sunset".

"Contractions of steel rails between Seward and Fairbanks became so acute, the mainline snapped in Nenana Canyon. Rails curled up like huge watch springs and caught a train in its coils. It took weeks to straighten out the mess, and the railroad was forced to put down rubber rails to prevent such freaks from happening again".

"One train was making good time until the long nose of the locomotive entered a tunnel, everything came to a stop. Passengers landed in a heap. A school teacher bound for McKinley National Park landed in the arms of a gold digger, and they lived happily ever after".

"Officials discovered smoke from the engine had frozen so solid that when it hit the top of the tunnel, the train came to an abrupt stop, and cutters had to be hired to cut smoke from the stack just before entering a tunnel".

"One night 53 persons with slow circulation froze solid as they walked out of a theater in Fairbanks. Mme Tussaud's Wax Museum in London cabled an offer to buy the entire lot. Sled dogs froze into statues and one famous lead dog, hurrying home, froze in mid-air with all four feet off the ground."

"And that's the truth", says Rinear, I swear it".



WORLD'S RECORD ALASKAN BROWN BEAR KILLED NEAR COLD BAY, ALASKA

On 26 May, 1948, Bob Reeve, owner and operator of the Reeve Aleutian Airways, shot and killed a giant Alaskan brown bear that turned out to be the largest brown bear ever killed or recorded.

Bob Reeve, an old friend of the Alaska Communication System, has been an Alaskan bush pilot for many years. During World War II, Bob flew many ACS personnel over the Territory of Alaska and to and from the Aleutian Islands.

Originally starting out with one aircraft which he flew himself, the business gradually grew into its present status as the Reeve Aleutian Airways.

In May, 1948, Bob in company with several friends flew out the Alaska Peninsula to a point near Cold Bay for the purpose of hunting the great Alaskan brown bear. On 26 May, Bob spotted the bear at a distance of about 240 yards; he immediately opened fire with a Model 1895 caliber .405 Winchester Rifle.

The first shot broke the animal's right hip but in spite of this crippling wound, the bear broke into a run; a second shot at a measured

distance of 270 yards penetrated the right shoulder, tore through the chest and came out through the opposite shoulder, killing the bear instantly.

The hide of this giant bear measures 12 feet 4 inches in width and 10 feet 4 inches in length. The skull measures 19-3/16 inches in length and 11-1/2 inches in width after drying; while green it measured about 3/8 inch more in both length and breadth.

Also, the bear had only recently come out of hibernation and was very thin; his weight was estimated by experienced guides at about 1600 pounds. Later in the season this bear would probably have weighed between 2200 and 2300 pounds.

Inasmuch as the measurements of this bear exceeded any of those on record, Mr. Reeve was awarded a new world's record by the 'Boone and Crockett Club' in New York City.

At the present time, the tanned hide is on exhibition at the American Museum of Natural History in New York City, but it will soon be returned to Anchorage where it may be seen at the office of the Reeve Aleutian Airways.

FISH STORY

From the Seattle PI, January 24, 1905:

The ACS Cableship 'Burnside', after leaving Sitka for a point thirty miles north of that port, where a cable was broken, endeavored to lift the severed end of the submarine wires. The severed ends were between submerged cliffs and were difficult to raise. The men on the cable ship arranged their apparatus so that the Sitka end of the sunken wire should be raised first. Attached to the great government cable, the packed wire imbedded firmly in its jaws so that it could not be disentangled without great difficulty, was a large whale. It had evidently been rubbing its back against the large submerged wire.

In its playful 'stunts' it had endeavored to sever the great wire. The rubber packing became firmly imbedded in its jaws. Unable to get away from the packing, which adhered to its jaws not unlike the way in which molasses candy sticks to the teeth of an ambitious infant, the whale simply drowned.

TALL TALES OF ALASKA

An ACS Sgt and several Rcts were sitting around a remote repeater station in Alaska discussing the potency of Alaskan mosquitoes:

'The mosquitoes around these parts are the biggest and meanest I ever ran across,' said one of the Rcts.

'Aw! they aren't so bad,' answered the Sarge, 'you oughtta see the mosquitoes where I came from back in Alabama; when one of those babies getcha, you know you been got!'

Unknown to the ACS Sarge, and while he was talking, one of the Rcts slipped up behind him with the red hot poker and placed it firmly against his seat. . .

'Yipe!' shouted the Sarge, as he jumped up and grabbed the seat of his trousers, 'there's one of the boys from home!!!'

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"WE TRY TO DO THE IMPOSSIBLE TODAY"

"It's 4:30 men. When you clear this stuff away and dig that cable in, we'll go to chow." —(Immortal words of S/Sgt. Cecil C. Carroll.)

"THE MIRACULOUS TAKES A LITTLE LONGER"

"Now keep the moisture out of that cable—that's an order!! And hurry—the Colonel is on the line!"

Male Call by Milton Caniff, creator of "Terry and the Pirates"

IT'S EASY, MISS LACE! US GUYS DO IT ALLA TIME... HERE - I'LL DASH ONE OFF FOR YUH!

A LADY NAMED LACE IS A LASS, WHO WENT OUT WITH A YANK ON A PASS. HE SAID WITH A GIGH AS HE GAVE HER THE EYE, "YOUR DRESSES SHOW PLENTY..."

...OF CLASS"

"Get The Message Through!"

NEWS BULLETIN

VOL. 2 NO. 11

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8 PAGES

AUGUST 1944



WAMCAT CABLE NET LAID, 1904

(Note: This is the 15th installment of the early history of the ACS.)

CHAPTER SEVEN (cont'd.)

There were no electrical engineers of cable experience in the United States who were available to the Signal Corps. Hence, they had to be selected and trained by Signal Corps officers. Men also had to be trained in the complicated business of cable telegraphy. It was figured it would take a year alone to train men for these tasks.

But—Secretary of War Elihu Root was insistent that things get started. He wanted at least one section in operation by the time Congress met in December of 1903.

So—Greely appointed Lt. Col. James Allen to take over administrative and technical work, and Capt. Edgar Russel to draw specifications for manufacture of the cable, to organize the inspecting force and to instruct the electrical engineers.

All Greely had to do, then, was to bring men, instruments, cable and a boat together from China, England, New York and elsewhere and get them to their destination at an appointed time. A nice problem in logistics.

A start was made and enough spade work was done so that the cable line could be completed in 1904. The Coast and Geodetic Survey surveyed the route from Seattle to Sitka.

The Burnside, repaired at Shanghai, finished its Philippine chores in short time and reached Sitka July 7, then proceeded over to Skagway where it laid 21 miles of cable to connect Skagway and Haines.

Just when things were flowing smoothly, there came another delay—and a mishap.

The steamer which was to bring the bulk of the cable from Seattle was delayed for three weeks trying to come north from San Francisco, so the Burnside had to nose southward to Seattle to pick up the cable and get back to the Northland in an effort to beat the winter storms.

However, some 40 miles below the point where the steamer Islander had struck an iceberg and sunk with large loss of life some years before, the Burnside struck a low submerged berg during the night, cracking several plates on her bow.

Lieutenant Colonel Allen thereupon decided to start laying cable toward Juneau. Buoying up one end, the men of the Burnside laid 40 miles of cable to Juneau while the ship limped along without repairs.

As soon as repairs had been made and weather permitted, the Burnside completed laying of cable between Sitka and Juneau, and opened a cable office in Sitka October 2, 1903. That was all for that year, but Greely recommended extending the Sitka cable to Valdez as a final link in an All-American communications setup which would no longer require routing of messages to the United States via Canadian landline.

The cable system was completed in 1904. Here's a table:

Skagway to Fort William H. Seward (Haines—now Chilkoot Barracks) 21 miles.
Haines to Juneau, 102 miles.
Juneau to Sitka, 291 miles.
Seattle to Sitka, 1,070 miles.
Sitka to Valdez, 640 miles.
Valdez to Fort Lisicum, 4 miles.
Total...2,128 miles.

(More next month.)

MORE TROUBLE FOR EARLY ACS

(Note: This is the seventh installment of the early history of the ACS.)

Chapter Five THE YUKON TRAIL

Blasing of the Yukon Trail by Signal Corps line-men and officers was one of the most persistently difficult feats of the entire Alaska operation, and finally resulted in Greely's direct intercession in deciding a route into Fort Egbert at Eagle City.

The string of telegraph poles started at Fort St. Michael on Norton Sound, cut across country to the Yukon River, thence to Fort Gibbon, where the Tanana River flows into the Yukon. It was only when the line had been extended 50 miles north to Rampart that the real difficulties began, although the first section, from Fort St. Michael to Fort Gibbon, was no ice cream social.

This section was completed in the first year and a half of operations, on 18 November 1901, and with the on-again-off-again communications between Nome and Fort St. Michael, provided a combined land-line and cable system 408 miles long, which gave instant communication over a route which previously required 29 days by ordinary mail.

Capt. Frank Greene, signal officer at Fort St. Michael, wrote of some of the difficulties: " * * * Great delay, hardship and heavy expense were caused by the stupid action of the master of the Army transport, Katie Hearnich, who, about 1 October 1900, on his way down the Yukon River with orders to move a detachment of men from above Hualto to Kaltag, refused to receive the detachment aboard and steamed away, leaving the detachment standing on the river bank.

"This delayed the work over the Kaltag portage and put two detachments in such straits afterward that grave fears were entertained for their safety. Material was abandoned, and the men were forced to break trail by marching in columns of four through miles of snow more than waist deep to extricate themselves from their beleaguement."

Greely, the Chief Signal Officer, commented at the time that an investigation in Washington brought the disclosure from the Quartermaster Department that there was no such transport in government service, but even this information brought no help to those troops involved.

Greene also wrote: "The seasons have seemed to conspire against telegraph construction. The ground is almost impenetrably boggy in the fall. The cold is intense as low as 72 degrees below zero—in the winter. The snow is soft and deep in the spring, and in the summer, hordes of appallingly ferocious mosquitoes drive the men of the working parties to the verge of insanity."

The bugs, the cold, the snow and the mosquito weren't the only things that plagued Captain Greene.

There was the matter of selecting a suitable route beyond Rampart to Fort Egbert.

In 1902 the Yukon Trail had been extended from Fort Gibbon to Rampart City, with a view to reaching Fort Egbert by a direct route across country to Circle City via Beaver, thence up the headwaters of the Yukon River to Eagle City.

Captain Greene favored this route and inveigh against the other two under consideration. One then was via the Yukon Flats, and the other was way of the Tanana Valley.

The dusty old reports, written by Greely, don't say as much in as many words, but the inference strongly noted that there developed a battle between the "G-Men"—Greene and Greely—over the route to be finally taken.

(More Next Month.)

AND DID HE? YES, SIR!



McKINLEY PARK (via ACSNB, Anchorage)—

"Halt! Halt!"—came a piercing cry and 7/5 Emil Golling, newly arrived here and loaded down with bag and baggage, stopped, dropped everything and looked around expecting to see a guard.

He saw no one. Completely bewildered and anxious to get to the hotel, he scrambled for his belongings. Again the cry came, "Halt, halt, halt!"

Golling, angered, stared around. Finally, out of the brush came a friendly caribou. It sniffed around, poked its face at Golling and let go with what sounded exactly like, "Halt, halt, halt!"

What Golling said to the caribou was strictly CORRECT—but he did say that caribou's "halt" was better than any MP's he'd ever heard.

THANKS 'GERRY'
Thanks to member 'Gerry' Moremann SOWP member 2274-P for sharing some of the ACS NEWS BULLETINS with us. During his assignments in the SIGNAL CORPS from 1937-1945 he was Chief at Ft. McArthur WXX and Ft. Lewis. He also served with the ACS in Alaska from 1940-46. He was stationed at Ketchikan WXH, SKAGWAY-WXS and down the Aleutian Chain at Adak - WXF, also Kiska and others. 'Gerry's' first assignment was on the SS ARCTIC in 1932 with Alaska Packers [WOCM].

SAFETY FIRST!



ACS NEWS BULLETIN

The Wolf by Sansone



Don't be silly! - They're fish!

List of ACS Stations and OIC's - 1948 - 1949

RADIO CALL	STATION	DATE OPENED	OIC 1948	OIC 1949
WXFG	ADAK	10/7/42	DUNNELL, CHARLES	SNEAD, GEO. M., JR.
	AMCHITKA	1/24/43	AACS Operated with ACS frequencies and eq	
WXE	ANCHORAGE - *FT RICHARDSON	3/14/23	WINGFIELD, ROBT. R.	McKENNA, JAMES J.
WXB	BARROW	6/13/28	HETHERINGTON, EMMETT-BUCY, NORMAN R.	
WXI	BETHEL	9/6/28	JOHNSTON, HAROLD D.	SPERDUTI, ROBT. S.
LL	BIG DELTA	6/19/42	MARGE, GABRIEL S.	QUACKENBUSH, FRED K.
LL	CATHEDRAL BLUFFS	10/28/43	BRUNSON, HAROLD	BRUNSON, HAROLD
WXFP	COLD BAY	3/30/42	DANIELS, KELLY	PORTER, FRANK P.
WXU	CORDOVA	8/12/08	BLACKETT, RAYMOND	EBBETT, WALTER W.
WXO	CRAIG	1/24/18	POWERS, HARVEY L.	POWERS, HARVEY L.
LL	CURRY	NOV., 44	BROWN, WALTER L.	KINGREY, EVERETT L.
WXP	FAIRBANKS	11/11/03	CAMPBELL, JAMES M.	FELLOWS, CLIFFORD H.
	*LADD FIELD			
	*EIELSON FIELD			
WXL	FLAT	9/1/31	BERGERON, EDGAR D.	BERGERON, EDGAR D.
---	FORT MEARS	4/10/42	RUSSELL, EUGENE	---
WXV	HAINES	7/22/03	BLINN, WILLIAM F.	BLINN, WILLIAM F.
LL	HEALY	FEB., 47	SMITH, AUBREY M.	SMITH, AUBREY M.
WXA	JUNEAU	8/23/03	TELQUIST, CLARK V.	APPLEGATE, DELBERT P.
WXH	KETCHIKAN	12/24/06	MAJOR, THOMAS W.	MAJOR, THOMAS W.
	*ANNETTE ISLAND			
WXP	KODIAK	3/1/31	ROUGH, JOSEPH M.	BUCY, LAWRENCE W.
	*NAVAL BASE			
WXW	KOTZEBUE	7/27/24	BASTIAN, FREDERICK W.-HARRIS, RUSSELL R.	
WXFJ	NAKNEK AIRBASE	7/4/42	BELL, HARRY B.	TERRY, DUANE J.
WXY	NOME - *NOME AIR BASE	SEP., 1900	MORGAN, STANLEY R.	MORGAN, STANLEY R.
LL	NORTHWAY	6/20/42	MUNSON, WILBUR B.	MUNSON, WILBUR B.
LL	PALMER (OPR FOR ARR)	---	---	WHEELER, WAYNE O.
WXQ	PETERSBURG	11/19/09	JOHANNESON, JOHN E.	JOHANNESON, JOHN E.
WXR	SEWARD	8/5/05	SWITZER, JOHN R.	WILLIAMS, WILLIE F.
WXFT	SHEMYA	5/31/43	BRECHBIEL, LOREN D.	HUGHES, MAYNARD L.
WXC	SITKA	10/2/03	BUCK, CHARLES L.	BUCK, CHARLES L.
WXS	SKAGWAY	8/23/01	HALL, ALBERT R.	HALL, ALBERT R.
WXFN	UMNAK	3/30/42	NEUMANN, PETER, JR.	TOASO, ERNEST L.
WXFO	UNALASKA	---	---	KIMBALL, CHARLES S.
WXJ	VALDEZ	10/1900	GLANTZ, FRANK M.	JOHNSON, DAVID W.
WXFM	WHITTIER	2/1/43	CARTER, SIDNEY	GARBUTT, ALBERT J.
WXG	WRANGELL	12/21/06	PICKERING, SAM. J., JR.-THUESEN, EINAR H.	
WXD	YAKUTAT	2/17/41	RODENBERG, EDWARD F.-AMSDEN, GUY	
	*YAKUTAT VILLAGE			
	* BRANCH OFFICES.			

ACS NEWS BULLETIN Editorials

Published monthly by Public Relations Section, ACSNB, of Alaska Communication System, Seattle. (Member, Camp Newspaper Service.) NOVEMBER 1943

NOVEMBER 1943

DIDN'T WE GO THROUGH THIS Q BIZ BEFORE?

KETCHIKAN—Here are a few examples of Q signals and their obvious answers that lead local ops to agitate for repeal of the whole business:

- QRP—Shall I decrease power?
Answer: Anybody knows they never had a strong enough signal to read half what anybody says around here.
- QRR—Distress, use only in emergencies.
Answer: If it was a real emergency he would be too weak to send QRR...he would just be wheezing.
- QRQ—Shall I send faster?
Answer: No, you dope! Bring your dots down to 40 WPM and raise your dashes to 25!
- QRT—Shall I stop sending?
Answer: Well, I'll be damned...you ain't clear, are you?
- QRU—Have you anything for me?
Answer: Well you lid, why do you think I called you?
- QOV—Can you see me?
Answer: Whaddya think this is—television?
- QAH—What is your height?
Answer: What's that got to do with telegraphing...my eyes are blue and I'm five feet, eight inches tall.
- QUC—Your lamp is out of focus.
Answer: Yeah—and bloodshot, too!
- QNS—Is my speech intelligible?
Answer: Damfino...this is a telegraph circuit—but if you talk like you send...
- QRN—Are you being interfered with?
Answer: No—but there's a couple dames here with a funny look in their eyes.

WVH - Nulato

BY JOHN PENAZ

1920 1923

In 1917 during World War I, I tried enlisting in the tank corps but my parents would not give me permission so after the war ended I enlisted in the U.S. Army Signal Corps and asked for service on the Mexican border during Pancho Villa's war against the United States, but being an experienced wireless and telegraph operator, they sent me to Alaska in April 1920. After a long trip by trains and steamships I arrived in Nulato in June 1920.

There were nine of us Signal Corps men at the wireless station WVH in Nulato. My duties were as wireless and telegraph operator. The roster consisted of an Operator in Charge, three wireless and two telegraph operators, one lineman for the telegraph line, one mule skinner, one medic and a Japanese civilian cook called Jimmy the Jap. That is, he was a cook whenever he was not trapping for furs on his trap line. We ordered groceries in July and they had to last for a year. When Jimmy was not there we had to do our own cooking. There was one time when I roasted a duck that I shot and it tasted a bit fishy. Then later on a baked fish had a duck flavor. It may be that I shot a duck that ate fish in his diet. Another culinary experience was a mincemeat pie. I did not have quite enough mincemeat to fill the pie pan so some boiled rice was added. Being only 20 years old, my cooking experience was not the best.

We bought our sourdough bread from Mrs. Dahlquist, whose husband owned a pool room, our only recreation spot in town. Sometimes we replenished our food supply by hunting for ptarmigans, willow and spruce hens of which there were plenty. Fishing one day with Dully Tucker, our mule skinner, we went to the Nulato River where we filled our rowboat half full of dog salmon that we gave to the natives but we managed to catch 10 whitefish. There were in-

numerable fish in the clear cold water of the river.

One day in late autumn Andrew Johnson took me to a place in the woods to dig up some fish eggs that had been buried in the ground during the summer. He said that they should be "ripe" and they sure were, according to the smell. Andrew said that the older people ate them but he did not want any. Instead, he dug up another spot where he buried some blueberries and we enjoyed them very much since they were fermented. From there we went upriver on the Yukon where we inspected a still. This consisted of a five gallon gasoline can filled partly with dried apricots, water and sugar which had already fermented. An "L" shaped pipe was attached to it. Snow was packed around the pipe and "hootch" was dripping out. The revenooers did not come around in the winter time.

Hunting and fishing in the early 20's was very fine. Our working schedule at the station consisted of one day on and one day off so there was plenty of time to fish and hunt. One day Andrew Johnson took me on a hunting trip for a moose. I never had any experience in shooting large animals as I was afraid that if I missed a shot the moose might charge at me. However, Andrew got his moose and in a few days the whole village had a "pot latch" as they called it. Everybody brought something to eat with the moose meat and enjoyed themselves very much. Then at night at Sipary Hall there was a square dance and other dances. Andrew played the violin and guitar and I played the banjo. We were called the Nulato Jumpers.

Our wireless station was in a wooden building while the Operator in Charge lived in a separate house in town. Sometimes the outside temperature got down to 60 to 70 degrees below zero and it was one man's duty to get up at night to fill the stoves with wood chunks. We took turns in filling the stoves. The "john" was outside and we always took our large gloves along for the cold seat. Living in that manner did not bother me since I was so young. Living here in Florida at 74 years of age, I shudder to think of it.

—John Penaz

Nulato - 52 Years Later

Penaz Notes Changes

Once upon a time there were spark gap transmitters. Since then there have been great technological changes in the communications field. I was a wireless operator at WVH Nulato, Alaska, 52 years ago, in the U.S. Army Signal Corps when I was in the Washington-Alaska Military Cable System (WAMCATS). Today it is known as the RCA Alaska Communications, Inc.

My good friend John O'Larey (821-PM) KL-7HBK, lives in Nome with his wife Karen and is manager of the Nome Alaska Communications station. He has given me a lot of technical information. Let me expatiate for the Old Timers and other operators that followed later. This new method of communications is quite different from what was used in the early days of radio. At WVH, Nulato, we had a 10 kilowatt Lowenstein quenched spark transmitter, feeding a 200-foot vertical steel tower, with copper wire radials, on about 1250 meters. The RF antenna meter reading was about 15 RF amperes. The receiver was a IP-501, later to be a SE-1420.

WVH was a relay point to Nome, Iditarod, McGrath, Noorvik, Holycross, St. Michael. We also had a telegraph line to Valdez, with a number of stations on the line. Valdez had an under water cable to Seattle, Wash. We handled 150 to 200 messages in WVH per day. We operators had to know both Morse and radio codes.

In November 1974 there was a severe storm in Nome which caused flooding. Both the city of Nome and the RCA Alascom Earth station suffered severe flooding and damage. The RCA station lost their DC plant, generator, teletype repair shop and everything else that was in the basement. The station is right on the beach, separated by only a rock sea wall and the storm tore off the basement doors, etc. The station was off the air for about 18 hours, and for the first week after the storm/flood they ran the station with a 7.5 kilowatt Diesel on the bed of a pickup truck, which they parked on the sidewalk in front of the building. RCA Alascom in Nome operates a public telegram service via the satellite Earth station and also via troposcatter radio, marine VHF telephone, marine MF telegraph, marine HF telephone, bush HF telephone, bush dial telephone via VHF, plus miscellaneous services such as subscriber teletype, etc.



WAMCATS

A.C.S.

The only manual telegraphy left is the marine telegraph service, WKR, on 500 and 472 KC/s 500 watts. Point-to-point HF telephone service is maintained to several bush locations, using single sideband, one kilowatt, 2400 and 5370 KC/s. There is a teletype circuit that leaves Nome via troposcatter radio and arrives in Los Angeles after having used overland cable, submarine cable and microwave.

A 33-foot dish antenna is being used in Nome by RCA Alaska Communications, Inc. satellite Earth station. A much larger dish antenna is used at the Bartlett Earth station at Talkeetna and is 92.8 feet in diameter.

In October 1974, the new Earth station at Nome and Bethel started to carry traffic. Cost of the new Earth stations was about \$1.8 million. Bethel provides circuits to McGrath, Aniak and Iliamna, while Nome serves Kotzebue, Unalakleet and Teller. Both Nome and Bethel Earth stations can provide color television programs.

On Jan. 12, 1975 the residents of Nome were given a treat when they saw a live television broadcast between Minnesota and Pittsburgh at 8:30 Sunday morning. John O'Laren, supervisor at Nome Alascom Earth station, and Ron Hallett, the manager of Nome Cable Television, got a lot of telephone calls from viewers praising the television program. Ron said that the streets were deserted during the three hour program.

Isn't it wonderful what a few tubes, condensers and coils can do to bring the people together?

--John Penaz, 1321-P

Editor's Note

Following WW-2 some of the Signal Corps ACS Stations were taken over by the CAA. Later the Signal Corps divested itself from handling commercial traffic and sold its system to RCA Communications who improved and operated it for several years. About three years ago Pacific Power (Now Pacific Corporation) bought the Alaska Communication System and has operated it since. It is reported they are doing an excellent job in handling Alaska Communications.

Historical Review - Alaska Communications

PAST PRESENT FUTURE

DANIEL E. FARLEY

Editorial Comment

Historical Paper presented by SOWP Member Daniel E. Farley[TA-44], Quality Control Manager, Northern Radio Company to the PIEA-PESA Conference in Dallas, Texas in April 1969. Northern Radio is one of the true pioneers of the 'Wireless World'. Farley's perspective and comments on Alaskan Communications should be of interest to many of the Society members. W.A.B.

Communications in Alaska, other than by dog team and steamer, was started down the long road from telegraph line to COMSAT, by an Act of Congress on May 26, 1900. This Act authorized and appropriated money for the Chief Signal Officer of the U.S. Army to construct and operate a communication link between the military garrisons in the territory of Alaska by means of open wire and submarine cable. The Act also provided for commercial business traffic to be handled over these same lines. A rather frugal note was also written into the Act stating that "all receipts from such commercial business shall be accounted for and paid into the Treasury of the United States."

In the first year of operation -- 1901, 927 commercial telegrams and 1,537 official business messages were sent. By 1904 the commercial traffic load was 31,020 messages sent and received, while only 26,539 official business messages were sent and received. Seems like Congress had a good thing going with a rather nominal investment and approximately 100 men on the payroll.

Many of the relay stations and maintenance cabins built by what was then known as the Wamcats (Washington Alaska Military Cable and Telegraph System) became way stations for travelers on foot, horse-back and dog sled.

With the advent of "Wireless" during and after World War I, "Wamcats" inherited surplus military equipment and as funds became available, was able to purchase more sophisticated C.W. radiotelegraph equipment.

The fishing industry of Alaska was quick to see the advantage of "Wireless" communication and began installing commercial equipment and hiring radio operators during their summer canning seasons. It was not unusual for a "Wamcats" operator to be able to copy International Morse code from a cannery operator and send it out simultaneously over a telegraph line in Continental Morse.

In May of 1936, Congress authorized the reorganization of the system to be known as the Alaska Communications System. To many of you in communication, who have never been to our 49th State, ACS means nothing to you. You are probably much more familiar with A.T. & T., the Bell System and others, including COMSAT.

To the residents of Alaska and all businesses there, the military, and suppliers of communication equipment and services such as Northern Radio Company of Seattle, ACS is a totally unique organization.

The new name did little to change the character of the people, civilian and military, involved with ACS. Generally speaking, you cannot find a more dedicated, professional and just downright good bunch of citizens than the men of ACS.

Northern Radio Company built and installed many of the cannery, mining and village radio-telegraph units, beginning in 1930. Within the next year, Norco built and installed the first radio telephones at canneries and on cannery vessels.

These were massive, single frequency units, consuming at least a thousand watts to put fifty watts into a wire antenna, hopefully. Besides having some knowledge of radio, a technician needed to have a strong back. Plate power to operate the radio was obtained from either a one horsepower 32 V.D.C. or 110 volt D.C. motor, driving a 1,000 volt D.C. generator. But they worked, and played a part in changing the whole concept of fishing. As the radios became more compact and efficient, even the smallest fish boat installed radio-telephones.

Until fish traps were eliminated in Alaska, Northern had a small 12 volt 50 watt radio in the 10' x 10' trap watchman's shack.

Remote gold mines, villages, bear hunter and sport fishing camps, all used radio-telephone. One interesting circuit was, and still is, the "school teacher" network. Bureau of Indian Affairs teachers, in remote villages all over Alaska, would have a

nightly round robin, discussing their problems, exchanging recipes, speculating on the arrival of the next mail boat, and later, the air-mail plane.

"Northern" technicians criss-cross Alaska, literally from Ketchikan to Pt. Barrow and from Adak to Fort Yukon.

Almost all the stations sent and received traffic thru the A.C.S. station in their area. As a result, "Northern" became well acquainted with A.C.S. people, all the way from engineering in Seattle to operators at Kodiak, Unalaska and other A.C.S. stations.

During the lean depression days, A.C.S. operators often kept remote stations going by using parts from their own "Ham" gear and scrounging from other services.

When radio "blackouts" would occur and signals would fadeout for hours or days, and on one memorable occasion on Kodiak Island for almost six days, the A.C.S. operators would stay on duty sending and receiving messages from "bush" radio stations, until the log jam was cleared.

In 1937 an HF-AM radiotelephone link between Juneau, Alaska and Seattle, Washington, was inaugurated. A similar circuit to Ketchikan was established in 1939. In May of 1941, our very watchful Congress took note of this additional revenue and said "hereafter charges for interconnection between A.C.S. radiotelephone facilities and commercial facilities may be paid from receipts of the A.C.S."

Pearl Harbor and the threat of a Japanese landing in Alaska put a greater load on A.C.S. than had ever been anticipated.

In October of 1941, A.C.S. had a total of 348 civilian and military personnel. Before the end of World War II personnel had risen to well over 3,000 people.

With the staggering load of military traffic, A.C.S. still maintained its commercial traffic service. For the year 1943 more than 636,000 commercial telegrams were handled. Telegraphic money transfers amounted to over \$35,000,000. A.C.S. service and facilities were expanded enormously. Time does not permit me to go into any detail on this subject. One statistic does stand out, however. During the building of the 2,020 mile Alcan Highway, A.C.S. was there, providing advance communication for the road crews and set some 72,000 telephone poles in tundra in the summertime, when the composition of the soil is about 60 percent water, which was and is a heart breaking task. In the winter time at 40° below, you just blasted a hole in the ground and set the pole. Of course, when the spring thaw set in, you probably would have to go back and re-set a few miles or perhaps hundreds of miles of poles.

Northern furnished much of the portable radio equipment used in the construction of the Alcan Highway.

Shortly after the end of World War II construction of the DEW line of radar sites in Alaska started. Location of the sites was invariably on top of some mountain or on some point of land, so far out in the bush, so bleak and windswept that not even the hardy Alaskan natives had ever gone there.

Northern Radio provided communication to many of the contractors who built the DEW line and later to the contractors who built the White Alice stations.

In 1961, the U.S. Air Force established a BMEWS (Ballistic Missile Early Warning System) at Clear, Alaska. With this installation and its supporting communication system to the South 48, the Air Force became the predominant owner and operator of

(Continued on Page 28)



Alaska Communications Review - Farley

(Continued from Page 27)

communication routes on which A.C.S. relied heavily for its commercial circuits. The Secretary of Defense with the consent of Congress in May of 1962 signed a reorganization order transferring the A.C.S. to the U.S. Air Force. It is known as Alaska Communication System, 1929 Communication Group, U.S. Air Force.

Traffic handled, with Headquarters in Seattle, by A.C.S. has steadily mounted. Telephone revenues by 1967 had mounted to over \$15,000,000.

Northern Radio Company has broadened its base in Alaska, furnishing equipment to the many intra-Alaska Airlines and air taxi operators. A small HF-AM airborne transceiver was designed and built for the "Bush" airplane.

When the petroleum industry renewed its interest in Alaska, Northern worked closely with their communication people, developing different types antennas, power supplies, frequencies and different types of radio. After a season or two of trial and error a portable communication system was evolved that met the needs of the exploration crews. Weight, ruggedness and simplicity of operation were the principal consideration to enable a geological crew to communicate with their helicopter, fixed wing supply plane, A.C.S. or main supply base.

Usually the camp cook was the radio-operator, at least during daytime hours. And daytime hours in Alaska during the summer can be 20 hours long.

Time marches on. From exploration to production, communication is still vital.

With the oil strike on the Kenai Peninsula, new problems arose. VHF and telemetry were introduced into the expanding oil field. Northern supplied communication from the Nikiski pumping station to tankers converging on Cook Inlet.

Then the off-shore drilling platforms required communication to Anchorage, tug boats, crew boats and helicopters.

The latest area of exploration and development shifted to a vast area extending from the Brooks Range to the Beaufort Sea, known as the North Slope. Northern put together two complete communication packages for Alaska Airlines. These packages were housed in 20' x 8' x 8' trailers, which fit snugly into the Lockheed Hercules aircraft.

Each unit contained VHF-AM, HF-AM, L.F.-Beacon and V.L.F.-RTTY equipment, weather instruments, bunks for an operator, and one oil burning furnace. In a separate 10' x 8' x 8' trailer was housed a 15 KW diesel electric plant to power the communication equipment, and landing lights for the adjacent airstrip. Northern technicians flew in with the communications package to such glamorous places as "Suzy V" and set up antennas and got the show on the road, for airline operators to take over.

To digress a bit, you all probably know that Congress has authorized the sale of the A.C.S. Five or six bids have been submitted for the purchase of the system. It is expected that the price tag will be about 28 million dollars.

It is expected that the successful bidder will win, not necessarily on the highest purchase price, but rather on the intention of what will be done to provide direct distance dialing and expansion of the system to remote area service in the public interest of the State of Alaska.

What effect will the sale of A.C.S. have on communication in Alaska now, next year and five years from now? What effect will this pending sale have on communications in the area north of the Brooks Range and specifically around Prudhoe Bay?

It is not likely that A.C.S. will embark on any large program of expansion not already committed. If and when the new operator takes over on July 1, 1970, it is expected that there will be a time lag of 12 to 18 months before he can provide any significant increase in service. In five years, or less, COMSAT will have been installed, and made operational, a land station near Talkeetna, Alaska, messages would be relayed to an Intelstat Two series satellite orbiting over the Pacific, then to another land wire service to any place in the U.S.A.

This system will not have any effect on intra-state calls.



See Map Page 31

So what is to be done to provide immediate and reliable communications from Prudhoe Bay and other drilling sites on the North Slope. A glance at an A.C.S. map will show a vast area north from Fairbanks to Barrow and eastward from Cape Lisbourne to Ft. Yukon, with no established communications line. There are "bush" phone HF-AM stations scattered through the area, mostly low power units sending traffic to A.C.S. Fairbanks. Local airlines operating out of Fairbanks have installed HF-AM and SSB phone stations at various drill sites that are serviced by their planes. There are even a few L.F.-RTTY circuits.

Pending the installation of a reliable microwave circuit or cable capable of handling a large volume of traffic by the new owner of A.C.S., something will have to be done in the immediate future. How this is done, what type of a circuit and who pays for it, is a matter that will be debated by all parties concerned, loudly, but hopefully, not for long.

One quick and relatively inexpensive approach for each drill site operator would be to install a Single Sideband Transceiver of at least 150 watts PEP operating on frequencies that are presently available — 4791.5, 6948.5, 7368.5, 11437.5 and 11601.5 MHz, using a gain type antenna, directed toward Fairbanks or Anchorage; generally reliable communications can be obtained, provided a similar station is set up at Fairbanks or Anchorage.

A log periodic antenna would give the greatest gain, but is more expensive to buy, install and maintain.

Northern has furnished and installed a number of three element trapped beams working on 8-12 and 16 MHz in Limited Coastal Harbor stations. They have given reliable communications from Seattle to vessels operating in Southeastern Alaska, a distance of about 700 miles - to Dutch Harbor and Adak, at about 2,000 miles.

The trapped beam, mounted on a 40 foot tower will cost about \$2,500.00. Erection is fairly simple. It is designed to withstand 150 mph winds. It is not practical for frequencies below 8 MHz. The size of the elements become impractical below 8 MHz.

The beam has a gain of from 8 to 8 DB. There is a corresponding gain in the incoming signal, plus a reduction in noise.

The log periodic antenna has about 10 DB gain, can be adjusted for a low angle of radiation to provide reliable communication at distances of less than 1,000 miles. Northern is prepared to assist in the design and installation of either type antenna, or variations of both.

Because of the peculiarities of arctic conditions, even with the best antenna, good equipment, and up to a kilowatt of power, 100% circuit reliability is a rare thing. 80 to 90 percent is optimistic, and less than 50% with poor antennas and low power.

As you all know, under certain conditions of so called "Northern Lights", communication will deteriorate. Snow static in the winter and rain static in the summer all contribute to the amount of grey hair and the size of an ulcer acquired by the radio operator.

Another approach would be to establish one SSB station in the Prudhoe Bay area operated and maintained by the oil companies in the area. They would share in the expense, purchase, operation and maintenance. Traffic from the outlying drilling sites would communicate with the SSB base station by means of V.H.F. circuits, then by SSB to Fairbanks or Anchorage.

A VOX-PATCH at the Fairbanks or Anchorage station would allow connection to existing phone systems. A voice scrambler at each end of the circuit would allow increased privacy, if desired.

At this time, because of the few frequencies available, frequency sharing would be a necessity.

A UHF circuit roughly paralleling the proposed pipe line from the North Slope to an ice free port, probably Valdez, would also be a solution, but again, that is at least two, possibly three, years away.

A cable paralleling the pipe line would also be effective providing accessibility for servicing the cable and at the same time providing communication for pipe line servicing and control.

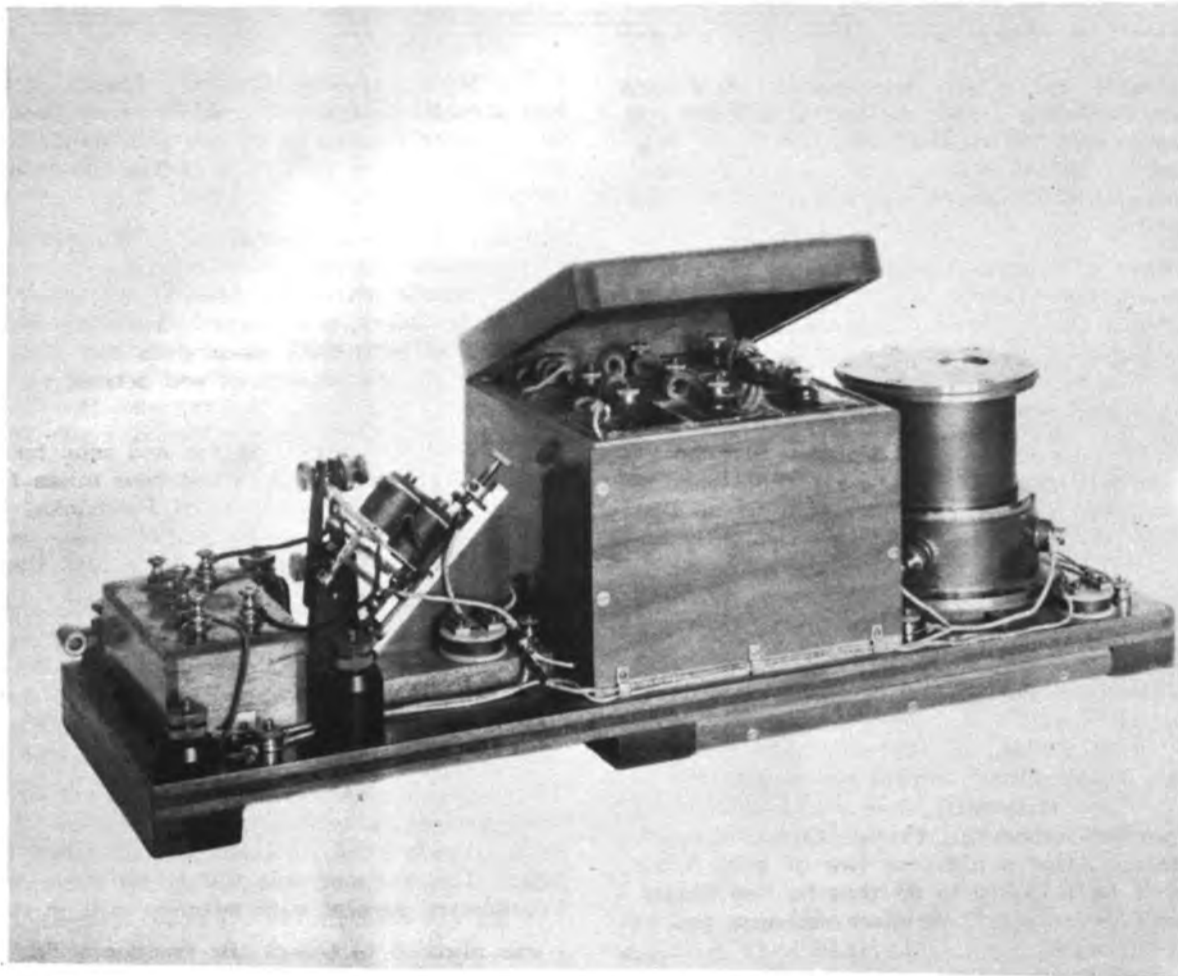
Another very good possibility would be to establish a centrally located V.H.F. station in the Prudhoe Bay area, with V.H.F. circuits to outlying drilling sites. Then by means of U.H.F. relay stations, go northwest about forty miles to Oliktok and tie into the Barrow-Barter Island White Alice system, thru Fort Yukon to Fairbanks.

An arrangement whereby the petroleum industry would furnish and install the equipment, and then enter into an agreement with A.C.S. to furnish personnel for system operation seems feasible. I do not know how many circuits would be available at this time.

Of course, the ultimate would be to orbit a satellite over the North Slope and relay signals off of it directly to Texas. That would really provide closer ties between the two largest states.

Oh yes, the orbiting satellite should be in the classical shape of a drop of oil!

Historical Equipment - Marconi - 1902



Coherer and Decoherer

This is the first production model of a Marconi receiver used on shipboard and at shore station installations during the early years of the century. It was eventually replaced by a tiny piece of mineral, such as carborundum, silicon, or galena, with infinitely better results. Pictures from Dickow's unpublished "Early History of Wireless". Picture by H.R. Clayton, London. Furnished to Dickow by the Marconi International Marine Communications, Ltd who will celebrate their 85th anniversary this year (1985).

Marconi's First Magnetic Detector



MARCONI used a cigar box for a cabinet to house his first Magnetic Detector back in late 1901. With this detector he was able to receive signals on board the Italian Cruiser CARLO ALBERTO in July and August of 1902 from transmissions sent out from Poldhu. In December of 1902 he was able to receive in Canada the first complete message transmitted from England with this equipment.

TRANSMITTER INSTALLATION JOB FOR WAMCATS - 1931

By Robert J. Gleason 642 P

When I returned from the year in the Arctic aboard Nanuk in August 1930, everything had changed markedly. With my father's death and the depression well under way I decided to shift my E.E. major from illumination to communications. We were fortunate to have Austin Eastman as head of the communications faculty at the U. of W. and I was to graduate in June 1931.

Jobs for budding engineers were no longer available at the big companies and the only job I could find required that I leave school, 15 days ahead of class completion. Despite this I took the job which was with the Nakat Packing Co. at their Alaskan cannery at Nakeen on the Kvichak River about 10 miles from its mouth on Bristol Bay. I was the radio operator - the call was KJI.

The entire cannery crew sailed June 1 on the SS Cordova arriving off the mouth of the river after a rough trip. I found that I had a tube transmitter with two of those Telefunken tubes that lit up like flares. It had AM capability which was used to work the Tally Scow anchored off the mouth of the river to receive the salmon from the fishermen in their seine boats. These boats were not allowed to have engines so used sail most of the time; many fishermen had been lost in the high seas and shallows of Bristol Bay.

Messages to and from the cannery were handled on CW with the WAMCATS station at Dillingham - call ☆. Bob Scarce was one of the fine operators there. H.B. Friele, an officer of the A and P Company which owned Nakat, would almost always sit in with me on my late schedule with ☆ and frequently they would send me the next days Nightletters on that schedule. Friele started answering some of them immediately. After a night or two of this, Bob Scarce said "tell HBF that if he is going to do that he had better send me a case of hand packed sockeye." Friele's response was "ask him where he wants it delivered."

This transmitter almost did me in one night. I had a "Wonder-phone" metalcased double button carbon microphone in my left hand, the modulator plate milliammeter stuck and I tapped it's glass with my right hand knuckle. Yes, I hit the tiny zero adjust screw which was hot. It knocked me down, but not out.

Enough for Bristol Bay. The system there was to wind up the entire operation in a rush leaving behind only the winter watchman (Earl Korf, SOWP 613-P knows all about that). We loaded all the salmon and everyone sailed on the famous old Victoria and were back in Seattle in early August.

I was lucky in finding that the chief operator on the Emma Alexander was going to take his vacation and Mackay Radio and Telegraph Company signed me on to relieve Chief Harding on August 15th. The 2nd operator, whose name I cannot remember, had been aboard Emma some time and knew all the ropes, but could not be chief as he did not have a First Telegraph License. We of course, worked round the clock. I had to learn how to operate an arc transmitter in a hurry. Emma also had one of those Mackay DC chopper/rotary gap rigs which made a heluva racket. Call WGCN.

The Emma Alexander was being operated as a cruise ship between Seattle; San Francisco, San Pedro, San Diego and Ensenada Mexico. I was too busy learning my job to find out whether there were any pretty school teachers aboard. Per the 2nd's instructions we copied press and got ready to use the mimeograph machine to print the ship's newspaper in the morning. As it turned out I was to cut the stencil which was ready when the 2nd came on watch to print the papers. He was shocked to find that I had not removed the ribbon to cut the stencils. So was I! There was no time to cut new ones but fortunately the ribbon was thin so the print was readable (almost). Shortly after we distributed the papers, I was called to the Bridge to meet the Old Man. I explained to him as best I could and he did not chew me out too badly. The entire trip then proceeded uneventfully but when we returned to Seattle I was again out of a job.

ooooOOoooo

Now we come to WAMCATS - The Washington-Alaska Military Cable and Telegraph System. WAMCATS came out of the efforts of the U. S. Signal Corps to provide communication service to Alaska and within Alaska starting during the Gold Rush days. WAMCATS was established by an Act of Congress in May 1900. By 1931 it was doing a tremendous job with both cable and radio between Seattle and Alaska and many radio stations scattered all over Alaska. WAMCATS provided commercial service for all in addition to providing military service. It had become a large and efficient organization operated almost entirely by U. S. Army enlisted personnel, some in the cities and many in outlying villages—from Ketchikan and Craig to Nome and Point Barrow. (John Dudley SOWP - 2798-V is presently writing a history of WAMCATS.)

I heard that WAMCATS headquarters in Seattle was looking for a "civilian radio electrician" to install some new transmitters at Valdez and Fairbanks. Eventually I was interviewed by George Gallatly the Chief Engineer. He started asking me questions, "If you encountered —what would you do, etc.". He never told me that I had been hired but did recommend what new tools I should buy, and I soon had my orders.

I left Seattle on the steamship Alaska on September 19th, 1931, had a quick visit with Sergeant Einar Theusen during the hour or so we were docked in Valdez and continued on to Seward where I met Bob Scarce (who had gotten the salmon from Friele and then caught the train for Fairbanks).

During the stop in Anchorage I managed to get to the WAMCATS office there and met Lieutenant Rex Corput who was then the only commissioned officer in Alaska, for WAMCATS at least. We continued on to Curry, near Mount McKinley where the trains regularly overnights with their passengers and crews. We had a beautiful trip through the mountains and arrived at Fairbanks the following evening.

NVOIC Ralph Reeser met me and soon had me quartered at the radio station which was about four miles from the Cushman Street "City Office" in the center of Fairbanks. A new Federal building—the first concrete building in Fairbanks—was under construction and WAMCATS office would soon be moved there.

At the radio station genial Sergeant C. J. Woofter and his operators, who did all their operating from there, assisted me in every way as we unpacked the brand new De Forest 2 Kw. MF transmitter and prepared to replace the arc with it. The De Forest was a beautiful three bay rig with a three phase well filtered power supply. Unfortunately I have never been able to find a photograph of it.

The antenna consisted of a steel tower about 100 feet high set on large creosoted timbers (as an insulator) with wires from the top of the tower down to insulators attached to poles about 10 feet high. This antenna was fed at its base—an "Umbrella Aerial". There were several such antenna still in use at outlying stations.

I was allowed to select the frequency "as long as no interference was caused" and after some testing settled on 100 KHz.! This was the main station to be communicated with. The set up was that Fairbanks - WXP - handled traffic from outlying stations in the Interior; Fort Egbert, Fort Gibbon, Manley Hot Springs, etc. relaying to Anchorage - WXE - which forwarded traffic south and on to the States.

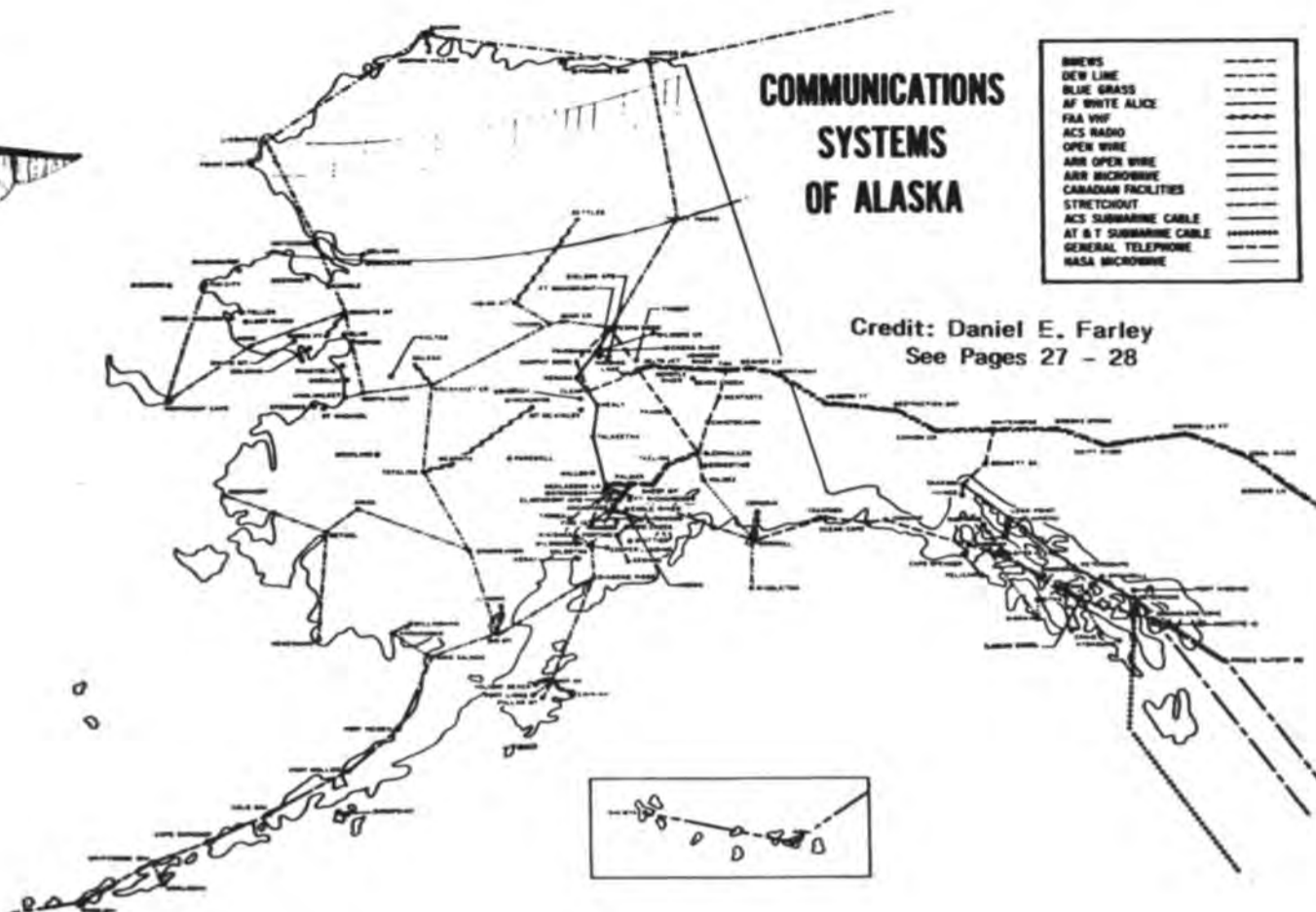
After completing installation and testing the new transmitter, I repaired the old tube transmitter which I believe was an SCR-109A like those used at most of the outlying stations. Next I found that Sergeant Reeser was very anxious to close out the troublesome railroad telegraph line to Anchorage which had been kept in service as a backup for the arc transmitter. He also wanted me to try to arrange for remote control of the transmitters from the City Office. We erected a very long single wire antenna on 70 foot green spruce poles (total approved cost \$70!) moved an SE-1420 receiver down town and used a pair of the overhead wire lines out to the radio station. This proved quite successful and use of the railroad line was abandoned.

Now in 1985 some of you may wonder what the Signal Corps was doing installing MF (not HF) in 1931. Actually we were lucky because anyone who has operated for an extended period in high latitudes knows that one cannot depend on ionospheric propagation for reliable communication. With satellites you can. With LF or MF you can. During WW II this had to be learned by many a government agency.

With everything well set at Fairbanks I began figuring on a way to get to Valdez and save some time. Steamer sailings and train connections were infrequent. In Fairbanks I had of course met some of my old friends who had flown to Nanuk at North Cape, notably Joe Crosson and Harold Gillam. Crosson was now Operations Manager for Alaskan Airways which had been founded by Carl Ben Eielson in 1929, Gillam had bought an open cockpit Swallow biplane and started an air service based in Copper Center. It was Gillam who suggested that he give me a free ride to Copper Center, then I would go by stage to Chitina, catch the train to Cordova on the Copper River and Northwestern Railroad, meeting the northbound steamer and make the short trip to Valdez. It was estimated that this would save at least a week of time. WAMCATS hdq finally approved this and I flew with Harold for 2 hours and 10 minutes to Copper Center on October 25th. We had to get a taxi to come over from Chitina which was arranged and I left Copper Center that night arriving Chitina about day break and in time to catch the train which left at 7 AM. The trip down the Copper River on this now abandoned railroad was beautiful and we approached Cordova on time. But, alas, as we neared the town we saw the steamer I was to take on her way out of the harbor! So my plan had gone to hell.

(Continued on Page 32)





Credit: Daniel E. Farley
See Pages 27 - 28



A stretch of the Alaska Highway, along which ACS installed radio stations for administrative communications as one of its wartime accomplishments. A year before this photograph was taken, this region was isolated wilderness. U.S. Signal Corps Photo.

If there was ever a major region of the earth where radio — and notably amateur radio — ranks as a No. 1 indispensable, it is the vast Alaskan empire. True in peacetime, this has been even more true in war. This article tells the story of Signal Corps communications in Alaska from the days of the WAMCATS, beginning at the turn of the century, up to the present-day Alaskan Department and the Alcan Highway. It tells, too, how hams and ham gear helped make possible the wartime expansion of Alaska Communication System operations required to meet and thwart the Japanese threat in the North Pacific.

A 37-mm. Jap shell whirred through the Aleutian fog with a muffled whistle and exploded above the camp fire. Eight Signal Corps enlisted men of the Alaska Communication System hit the tundra simultaneously. After a fear-filled moment they sheepishly rose, dusting the mud and the campfire debris from their Arctic clothing. None was hurt, but a flying piece of steel had winged a soldier from a unit near by.

The locale was Attu, and these men had just finished building a temporary Signal Corps radio station to furnish administrative communications for the American invasion forces. Inside a near-by pyramidal tent, set up within a bomb crater, the radio station was still carrying on its business of "getting the message through."

Getting the equipment to the site had been even more of a task than actually setting up the station. The transport on which the equipment was loaded ran aground near shore. With rising waters and oil in the hold threatening the cargo, the signalmen worked valiantly all night to extricate their equipment. Still without sleep, they finally succeeded in getting it all ashore the next morning.

"Cats" and trailers made scant headway over the churned-up beach and the soggy tundra. All hands got in and pushed when the going was tough — which was most of the time. Even Col. Irwin L. Kaufman, Alaska Defense Command signal officer, lent the weight of his shoulders.

It was when the men were up at the next day-break, eating a K-ration breakfast, that the Jap shell punctuated the meal. That day, and for days thereafter, American machine guns routed out Japs burrowed into foxholes on the hillsides flanking the valley station site.

The story at Kiska was different. One signalman, a chief operator, had two narrow escapes in 24 hours from unexploded "duds." There may have been no Japs left on the Island, but they had left plenty of calling cards.

From WAMCATS to ACS

Task-force operation was something new to the Alaska Communication System in its 43-year-old history as the "Western Union of the North."

The ACS is part of the Signal Corps' Army Communications Service, headed by Brig. Gen. Frank E. Stoner.

The story of the ACS goes back to 1900, when Congress set up the Washington-Alaska Military Cable and Telegraph System to furnish communication to, from and within the Territory of Alaska. The lawless days of "The Spoilers," recorded in Rex Beach's famous novel, prompted Congressional authorization of the old WAMCATS, so-called because of the System's initials at that time. The prime purpose of the Army Alaska network was to link the various garrisons scattered through the territory. Commercial business also was authorized.

The system always operated on a paying basis, all funds received being turned into the Treasury Department. Allocations for carrying on the communication work which the system performed were made from War Department funds provided for that purpose.

Ocean cable and landline telegraph stations were established during the first four years of the century, one link in the chain being the first over-water radio communication on the North American continent — from Fort St. Michael across Norton Sound to Safety Harbor, near Nome, a distance of 107 miles.

Furnishing territorial communication was no small chore, considering that Alaska proper, from its westernmost island of Attu to the southernmost portion near Ketchikan, extends over as great an expanse as the distance from San Francisco to Jacksonville, Fla., and that the area of the Territory is slightly more than three times the size of the State of Texas.

The WAMCATS operated the cable, telegraph line and radio system within Alaska until the change-over in the last decade, which brought virtual cessation of the worn cables and the tripod telegraph lines in favor of medium-frequency and high-frequency radio operation. About this same time the name was changed to the Alaska Communication System, or ACS.

Wartime Expansion

Alaska was a backwater in World War I and the System carried on much as it had in peacetime. There were then only 24 infantrymen stationed in Alaska — a far cry from the thousands manning the northern outposts in World War II!

The System followed the ups and downs of the various growths and declines of the territory until a few months before Pearl Harbor, when the Alaska Defense Command, now known as the Alaskan Department, was established.

Various expansions planned by ADC were allocated to the ACS. Chief among these was the furnishing of long-line radio communication to tie the various outpost airfields and garrisons into a cohesive network which would furnish the ADC with administrative communication.

Progress on this work had barely started when the Japs struck at Pearl Harbor. Promptly there came an order from the Chief Signal Officer, then Maj. Gen. Dawson Olmstead (himself formerly officer in charge of the ACS from 1931-33), designating the ACS as responsible for all fixed communications within Alaska. The directive, in effect, ordered ACS "to procure, contract for, install, make any necessary arrangements, to furnish any necessary fixed communications for the vital defensive zone of Alaska."

This meant not only ACS installations but ACS-ADC stations, harbor defenses, Army Airways Communications System installations, and post telephone exchanges. It was a gigantic responsibility for an outfit which in September,

1941, had numbered scarcely more than 300 officers and men. And it meant spending millions of dollars annually, instead of a mere two or three hundred thousand as before.

Far from being dismayed, the ACS, headed by its commanding officer, Col. Fred P. Andrews (then a major), buckled to the job.

Col. Andrews believed that, regardless of the lack of standard Signal Corps equipment for the long-haul radio links required, it was the System's primary function to get those wartime messages through — no matter how.

He ordered the radio market scoured for communications receivers and transmitters of any type which could be modified to meet the various point-to-point communication requirements within Alaska. The ACS shops were expanded to handle the modification and reconstruction of this equipment.

Hams and Ham Gear

It was not at all uncommon for detachments of ACS operators and engineers to leave Seattle in all kinds of weather — mostly bad — with 40 to 60 tons of freight with which to establish an outpost station. Nearly always, if this freight could have been examined, one would have found various amateur and rebuilt obsolete commercial transmitters within the cargo.

An intensive enlistment program had been inaugurated and the System grew to more than six times its original size. Radio hams especially were sought. One of the largest radio operators' schools in the country was established.

New stations popped up in Alaska like mushrooms. Where there had been 24 peacetime stations, there were now a wartime 48. At each "defensive" — later to become an offensive — airfield, you'd find an ACS station in operation, handling administrative and command traffic for the ADC.

(Continued on Page 32)



This scenic view shows an ACS installation along the Alaska Highway in Canada. The road is visible in the immediate foreground. The long building at the right is a telephone repeater station, and in the woods behind it is the radio station. The power shack is in the center.

The Story about ACS is being republished from the April 1944 issue of QST. The article by Gail A. Fowler shows the value of amateur radio even in those early days. Thanks to Member Gerry L. Moormann for furnishing the story which is now over a half century old.

(Continued from Page 30)



— B-r-r! An ACS installation huddled in the drifts "somewhere in the Aleutians." The winds in this region usually blow away the snow before it has a chance to reach any depth, but there are exceptions — and this is one of them. U. S. Signal Corps Photos.

Improvisation in the field was the rule rather than the exception. It was not unusual for a detachment, arriving at a remote location to establish a radio station, to discover that much equipment was missing, that radio gear had been broken by rough hauling, or that many parts had been damaged by the incessant rains.

Fortunately, through its previous experience with the ups and downs of communication, the System had developed an excellent quality of officer and enlisted man. This quality was reflected in many station jobs where men without their experience would have been stymied.

Five stations sprang up in the interior in six days during the hectic summer of 1942. One ACS captain bought up all the equipment he could find in Fairbanks and dispatched it, with crews, by air to the station locations, thus saving a couple of weeks over the time that would have been required to have the hurry-up order shipped from Seattle or Anchorage.

ACS in Combat

First connection of the ACS with task-force operations came shortly before the Jap bombing of Dutch Harbor, when ACS teams put ashore with their equipment at points on the bleak Alaskan Peninsula and in the vicinity of Dutch Harbor.

Later there were the landings at Adak, Atka and Amehitka, made right under the noses of the sea-based Jap bombers. Then came the Attu, Shemya and Kiska landings. By that time task-force operations had been refined to a neat point, earlier shortcomings becoming yardsticks for future simplification and improvement.

Nowadays two complete stations are packed and assembled, one to provide initial landing communication and the other, on a second boat, for use should the first equipment be lost by enemy action or other mishap. A third station, of a permanent type, is left behind at an advanced base, to be sent along when consolidation of the new position is established.

The ACS usually goes in with the second or third waves. When the landing craft grates upon the inhospitable shore, out leap the signalmen, carrying tents, portable power plants, antenna wire, and the smaller radio equipment. While the advance guard heads for the temporary station site, a detachment remains behind to supervise bringing the heavier crates ashore.

Within a matter of hours communication is set up with the net control station. Machine guns may rattle, mortars may boom, Jap bombers may unload their sticks — but still the high staccato hum of c.w. comes from the hastily erected and camouflaged operations tent.

From this time on, operations are routine. More equipment is brought ashore. A permanent station site is selected. Reconnaissance is made for remote receiver and possibly remote transmitter sites, and permanent station construction, based upon the ever-popular Quonset or Pacific hut, is initiated.

Later comes the installation of post telephone lines and exchanges and the establishing of teletype communication between various commands.

Long-Haul Administrative Circuits

The ACS does not serve a tactical function, in that its purpose is not to establish intercommunication for a battle front. Its true function, among others, is the installation and operation of administrative long-haul command circuits, upon request from authorized agencies.

In the summer of 1942 the ACS went into Northwestern Canada. ACS-trained operators were sent into one sector of the Alaska Highway, where they manned command cars and bumped along behind the engineers' bulldozers, keeping the isolated road groups in communication with supply centers and sub-headquarters.

The ACS also engineered and installed fixed radio stations of comparatively low power every 100 miles or so along the highway. These stations provided administrative communication for the myriad trucks plying the highway, until the new Alcan telephone line, also ACS supervised, was put into operation. This line travels along 1950 miles of some of the most difficult terrain ever penetrated by copperweld wire — from Edmonton to Fairbanks.

Radio engineering and installation also was an ACS job at the airports linked by the Alcan supply road. These ultimately connected with AACCS nets already installed in Alaska.

The ACS did the Signal Corps' trouble-shooting in Canada until the Northwest Service Command was set up and ready to function with its own Signal Service Battalion. Many of the men assigned to this battalion receive training at ACS headquarters in Seattle before being shipped north.

Meanwhile, many abandoned submarine cables were restored and new ones laid as a means of providing added security for wartime transmission. Radio, telephone, cable — the ACS is a three-way operation, with radio comprising 50 per cent of the installations.

So goes the story of the Alaska Communication System, an organization unique in the annals of communication. It is owned and operated by the Army, yet it also serves a civilian commercial function. It is not tactical, in that it does not provide intraservice requirements, yet it links command posts over long distances to base stations. It is served by one company of men — the Signal Service Company — and yet it is nearer in size to a regiment. The area served by the ACS may be visualized by drawing an approximate circle, starting at Seattle, through Edmonton, Point Barrow, Attu, Ketchikan, and back to Seattle. The sturdy crow's flight enclosing this vast communication empire covers a route of more than 9000 miles.

And if this empire should ever be extended southwest from its present westernmost point — well, the ACS will be ready to answer that call when it comes, too.

Valdez Anyone ? Gleason

(Continued from Page 31)

Well, I went down to the dock and tried to find someone who was going to Valdez. No luck, but I finally found the skipper of a small seine boat who agreed to take me there for \$50.00. I had only some tools and a small bag—Woofter was sending my large bag to Valdez by train and steamship as we could not carry it in the tiny Swallow—so I got aboard and we started off. The weather was good and it is only about 90 miles by water from Cordova to Valdez. After we were out a while I noticed that the Skipper's partner kept feeling the engine which was a brand new Ford V-8, the first one having failed from overheating. This did not make me feel too comfortable particularly as we got into Valdez Narrows. The wind was coming down the glacier and we were running into big rollers straight at us. But the engine kept running and we arrived Valdez in good shape. Incidentally it was months before Colonel Olmsted finally got approval to pay me the \$50.00 for non-tariff transportation.

Theusen was most hospitable and anxious to get the pretty new transmitter in operation. It was an RCA ET-3626-B (also built as Westinghouse Electric Type TK), 750 watt CW/ICW, 600-2500 Meter unit using a motor generator for power supply. Many will remember it because it used six UV-211 tubes in parallel for the amplifier driven by a single 211. An eighth 211 could be switched on to provide a 500, 700 or 1000 Hertz tone. It was a very nice transmitter for its day with the ICW especially useful for raising the ships. The installation was completed without problems and was very satisfactory except that electrical noise from the motor generator prevented full break-in operation.

As instructed I sailed south on November 4th. I received a fine letter of commendation for my work but found WAMCATS had no more funds to hire civilians! Col. Olmsted wanted me to enlist and offered me a nice job at Juneau but I did not want to join the Army. Instead I decided to go back to Fairbanks and be on hand for a job with Alaskan Airways, Joe Crosson having told me that their parent company, American Airways, was planning to install radiotelephone stations at Fairbanks and Nome and in their aircraft. So I decided to go back to Fairbanks and did late in November. But that is another story.

His "Q" Signal Sank Raider

You may be interested in hearing about a distress call which I once sent. It was early in February of 1943. I was on the S/S George Rogers Clark, KKGK. We were in the South Pacific bound Sydney from San Francisco.

Sometime around noon we were being approached by an armed raider. She refused to show any identification or to answer our blinker. This certainly called for immediate action on our part.

I sent a "QQQQ" on 600 meters giving our position and other vital information. Rarotonga Radio acknowledged the "QQQQ" immediately. What followed may seem hard to believe but truth is indeed stranger than fiction.

Immediately the enemy raider changed course and took off in a northwesterly direction. Planes from Rarotonga quickly located the raider and sank her. I think the captain of the S/S George Rogers Clark is still living in the San Francisco Bay Area and he can verify all I have told you.

Quite a few "QQQQ's" have been sent but I doubt whether many operators survived to tell about having sent one.

--George L. Meek - 1290-V
[SK - Sept. 1984]



— The interior of a westward ACS station after some of the refinements of a permanent station have been installed. The ruggedness of early operation immediately after an Aleutian landing is gone. The neat filing cabinet at left, the clean-cut operating positions, the big wall clock and the fluorescent lighting — all are a far cry from the mud-floored tent in use when this station was first established.

THE SHIP'S MEDICINE CHEST

Every Company seagoing vessel is provided with a medicine chest supplied in the interests of the crew's health. The contents of these chests conform with the recommendations of the United States Public Health Service.

On this subject we quote one of our Masters: "Occasionally, men hesitate to come to me for medical aid. Possibly they do not realize that equipment and drugs are available with which to treat their complaints. I wish to emphasize that medical gear is put aboard to be used, if needed. The medicine chest is not something that is opened up just as a last desperate resort . . . it is opened up any time anyone requires medical treatment."



"THE SKIPPER WILL OPERATE, JOE, DIRECTED FROM SHORE BY TELEVISION."

1931 - Prognostications of the Radio 'Experts'

... An Authoritative Forecast

A symposium on the future trends in various fields, combining the views and predictions of men who are making radio history, which gives great promise for advancement in the art and industry

RADIO NEWS FOR JULY, 1931

Television's Progress to Be Great

By C. Francis Jenkins
Jenkins Laboratories

THE popular phrase, "the first hundred years are the hardest," holds true with television, though the number may be greatly reduced. We early pioneers labored under difficulties raised by the lack of proven principles, laws, formulae and equipment. Our first strides, though not long compared with those still to be made, formed the solid groundwork on which others have built and will build in the future.

For this reason we may anticipate greater progress in television during the next five years than in the past ten, although such comparisons are difficult to make. Mathematically the difference between 0 and 1 is greater than between 1 and any other number. So, our past achievement in televising any image is greater than any improvement of that image.

But within five years I look forward to television becoming inseparably linked with radio broadcasting, and technical progress advanced to that point of fidelity where images will be accepted without thought of the fact that they are images, just as we now speak of seeing John Gilbert or Greta Garbo without thought that we see only their images on the movie screen.

Better Sets at Lower Prices

By Powel Crosley, Jr.
President, Crosley Radio Corporation

INDICATIONS point toward a continuation of the price market during the coming year. Therefore manufacturers will attempt to meet the public demand for better receivers at lower prices. It seems rather certain that this demand will be centered on small receivers with simple, compact cabinets, although more elaborate cabinets will be offered for those who desire them.

Many smaller receivers will incorporate features hitherto found only in the larger models, such as superheterodyne circuits, variable-mu and pentode tubes and other refinements. Superheterodyne circuits will be used almost exclusively in console models.

There will also be a certain demand for specialties such as clock model receivers. Automobile receivers will increase in popularity. In other words, the trend would seem to be merely a continuation of the past year's trend, with emphasis on superheterodyne and the pentode tube.

Broadcasting to Stride Ahead

By William S. Paley
President, Columbia Broadcasting System

RADIO'S uncharted future constitutes a challenge to human ingenuity and artistry. It is the assumption of everyone connected with broadcasting that great strides forward will be taken both culturally and scientifically; this assumption, as is proper, is based upon the record of the past.

We are told by radio engineers that synchronization, to say nothing of television while it remains in the experimental stage, will bring sweeping technical changes. Regardless of engineering developments, we may expect radio programs themselves to undergo constant improvement. I look for ever-growing popular interest in drama and music of the better grade. In anticipation of such interest we are constantly on the alert.

News Events by Television

By Hollis S. Baird
Chief Engineer, Shortwave and Television Corporation

WITH most television stations now sending a 60-line picture, the future should hold much more varied and entertaining television programs. This is of course very necessary to hold the public interest in their television receivers. The possibilities of mechanical television are by no means exhausted and we should see gradual improvements along these lines. More television channels are badly needed for the additional stations that are necessary to provide proper coverage. With recent improvements in photo-cells we may expect attempts to televise a boxing match or part of a baseball game with direct pick-up.

Big Future for Short Waves

By McMurdo Silver
President, Silver-Marshall, Inc.

WHAT are the trends of short waves and regular broadcasting? This is a question that may be viewed from the standpoint of the listener or of the broadcaster. The listener's viewpoint should be most interesting to RADIO NEWS readers.

In both fields the old urge and interest of distance reception is much to the fore. Due to the increasing number of short-wave stations the experimental, and today even the entertainment, facilities have so expanded, that a rapidly increasing use of short-wave receivers should occur. For the DX hound of the family, the short-wave set is an excellent and inexpensive solution to the old problem of fishing for distance on the regular broadcast set just when the family is all nicely settled down for an evening of chain program entertainment.

On the regular broadcast band, the increasing use of higher transmitting powers will increase the program availability for listeners, while this is even further increased by the growing popularity of good superheterodynes, increasing as they do through their excellent selectivity, the number of programs that may be had by the listener—in a word, more distance, but not just more distance for itself, but rather more entertainment in the form of localized programs from various stations of the continent when the big chain programs pall, as they will occasionally do.



Powel Crosley, Jr.



William S. Paley

Foreign Programs and Television

By Edwin K. Cohan
Technical Director, Columbia Broadcasting System

THE next few years will see tremendous strides in rebroadcasting programs of foreign origin. Much has already been accomplished in this direction and the Columbia Broadcasting System is offering transatlantic programs to its listeners throughout the United States on a regular schedule. Synchronization and television will also bring about many new developments in station transmitter design and in network engineering. There will also be an increase in the use of short waves in relaying programs.

Keen analysis of engineering requirements and efficient staffs enable network programs to go on the air uninterrupted. The Columbia chain is on the air eighteen hours a day through the joint efforts of sixty technical men in New York and 800 engineers in other parts of the country. This number does not include telephone engineers in charge of the spider-web wire-line hook-up of the various chain stations.

Recorded Programs for Television

By John V. L. Hogan
Consulting Engineer

THE trend in combined sound and visual broadcasting seems likely to be toward a more extensive use of sound-on-film. The transmission of sound on the broadcast waves along with directly scanned pictures on the television waves involves very few technical problems, and is already quite satisfactory. However, the difficulty of supplying and syndicating program material for direct scanning constitutes a good reason for extending the use of recorded sight-and-sound.

For television, film and disc combinations are generally less satisfactory than sound-on-film, particularly when the pictures are scanned by the continuous-motion process. This latter avoids the complications necessary when intermittent film motion is used for the pictures, and makes reproduction of sound and sight from the same film a particularly desirable method. Future television programs will doubtless contain a large percentage of such co-ordinated sound entertainment and instruction.

Amateurs to Help Television

By E. F. W. Alexanderson
General Electric Company

TELEVISION has given us hopes and promises to fulfill several of our natural desires. This explains the great interest shown. One of these desires is to be entertained; another is our curiosity, the desire to see with our own eyes whatever happens. A third interest is the thrills we get from experimentation and research as amateurs, as well as professionals. I have here indicated three possible branches of television and there may be more, but I believe that the method of attack in each of these branches will be different.

Those who seek entertainment at home will buy highly perfected instruments. Television news will be flashed on the screens in theatres and the amateurs will have their ever-varying home-made devices. It is their interest that will keep the flame alive until our greater hopes are fulfilled.

Television Pick-ups Coming

By J. R. Poppele
Chief Engineer, Station WOR

RADIO, like a growing child, if observed through every day of its history, does not seem to change much. The changes and improvement are gradually but constantly applied. Looking back through the years, the vast strides of the industry can be readily seen.

In February, 1922, we installed the original transmitter of station WOR in the Bamberger Department Store in Newark. It was a 200-watt set and considered a perfect transmitter. It was erected in a room ten feet square that also housed the studio facilities of the station. In July of the same year, we moved into a room twice the size of the former and a new 5-kilowatt transmitter was erected on the roof. This transmitter is still used as an auxiliary "stand-by" set for emergency application. In September, 1927, WOR moved its transmitter to the present site at Kearny, N. J. Seven studios supply programs for WOR audiences. Four studios are in New York, two in Newark and one at Kearny.

Our next big step will most likely be to television. I can see many complications arising in transmitting sight from remote control points. At present it takes a crew of six men to tote "nemo" apparatus. It will probably take trucks to convey television pick-up apparatus to ball-parks and such other points where future television programs will certainly originate.



C. Francis Jenkins



Ray H. Manson

Radio Indispensable in Police Work

By Edward P. Mulrooney
Commissioner of Police, City of New York

OUR application of radio in the past proves that it is indispensable and a permanent unit of police operations.

On occasions, we utilize radio in new and unusual ways. Just recently, I spoke to Captain Randall of the Leviathan. His ship was at sea and I heard him distinctly over my desk telephone.

Several of the police automobiles are equipped with receivers that are capable of receiving programs on the ordinary broadcast band. A private, short-wave system for such communication, which we hope to obtain, will prove more valuable in this work.

Radio is today such an important division of the Police Department's Bureau of Telegraph, that I am asking for additional appropriations to expand the police radio system. If the expenditures are authorized, we will augment our present harbor communications systems, install a short-wave station for contacting radio-equipped police cars and equip the police airplanes with radio apparatus. The personnel of the radio division may also be enlarged if the appropriations are made.

Besides our present radio station, the Police Department has use of the facilities of station WNYC, the municipal transmitter operated by the Department of Plant and Structures.

Multi-mu and Pentode Tubes

By F. A. D. Andrea
President, Fada Radio Company

THE outstanding development in radio receiver design in the immediate future will include pentode tubes, the adoption of multi-mu super-control screen-grid tubes and improved circuit designs will incorporate the best features of tuned radio frequency and superheterodyne.

Essentially, however, these developments are refinements of existing technique comparable perhaps to free wheeling or synchro-mesh in the automobile. They will provide a somewhat greater operational efficiency but will not necessarily directly effect the most important factor, "tone quality." Fada engineering laboratories are instructed to place tone at the head of their list and to strive with all their energies for even more faithfulness in reproduction, which we believe has always been a cornerstone in our success. Compact table receivers will undoubtedly remain standard items, with a definite demand for better quality performance and tone.

Console models will unquestionably continue as the predominant type of radio receiver, but these console models will be more refined in appearance and lower in price.



McMurdo Silver



F. A. D. Andrea



Jack Poppele



E. P. Mulrooney



A. I. Abrahams



W. H. Hollister



Carl Dreher



J. V. L. Hogan



'I Flew to Nulato'

By Larry Burrow

Letter to 'Ye Ed' & Staff

Received the latest "Sparks Journal", last week which I am enjoying. Your memo re the next issue on aviation and as you mentioned some time ago would have a story on the ACS got me to thinking of several events to me and ties the ACS and aviation together. If you can use any of this material you are welcome to use it. Most of the things I have sent in, was taken from events that I had already written up in the last ten years from memory. One of the main reasons for them was my grand daughters. Two who live in Santa Barbara and two more in Los Gatos.

"Please QSL Grandpa"

Several years ago at Christmas we received an "IOU a letter once a month" from one of the girls. So each needed answering. Next thing we got an IOU from all 4. We ran short of material, so I started sending them things re our Alaska experiences. The next thing it was, "Dear Grandma and Grandpa, send us more stories of the Olden Days in Alaska. Keeps us both busy."

Am enclosing a couple pictures with explanations on the back. Also a couple experiences that I like to remember as good relations between the Bush pilots and the old ACS.

73 Larry Burrow - 3383-P

Spell of the Yukon—if you can find it !

During the winter of 1931 when I was stationed at WXY Nome, (ACS) and the day after Christmas that the manager of local PAA (Pacific Alaska Airlines) a branch of PanAm called on our OIC and asked if they could borrow Larry, (Me) for a few days. The OIC asked why. It seems that PAA had just had their mail planes that flew between Fairbanks, Nulato and Nome equipped with CW radios. They had just put in a base station at Fairbanks to contact these planes. One plane based at Nome, flew the leg to Nulato where they met the Fairbanks plane. They were supposed to transfer mail and passengers at Nulato. Up to this time, our mail came in by dog team, but the Post Office Dept., had finally been convinced that the planes could handle it, but not parcel post. So at Nome our magazines, newspapers, etc. took 5 weeks to get to us. First by ship to Seward then by train to Fairbanks, then down the river to Nulato, then cut across to Unalakleet and up the coast via dog team. Anyway, they could not get the radio operating properly in the air and wanted a regular radio operator to try and get them on the air. The days were short, only about 3 hours of daylight, so the plane went over one day and came back the next. (WP) The plane was to leave the next morning, the 27th. I had made several trips with the bush pilots to several villages and towns around Nome. Quite often, the pilot had a small load and just wanted company, so if I was off duty, I would go along. Also, I was the only operator at Nome that had a commercial ticket. The OIC said OK, so I rearranged with the other operator to cover me until I got back. (When I got back I had 4 days to make up).

The next morning as soon as it was light, we took off. It was about 12 below. The plane was an old single engine Fairchild for six passengers. We had no passengers, just the three of us. The pilot Jerry Jones, Mechanic Emmerson Bassett and myself.

It was a nice day, no clouds but a strong headwind. We had been in the air about half an hour when we discovered the heater was not working. The radio equipment was right behind the door and could feel the draft coming through. I had to take off my mittens to work on the equipment and also the hand key to send. When my fingers began to turn white would put my mittens back on. Finally got the rig going. Trouble was in the SPDT switch



USS GANNET - NIJX - 1929

This picture was taken near one of the glaciers in SE Alaska (Probably "Taku" but not sure). The ship was on an Aerial Survey mission in Alaskan waters. I believe there were several planes or seaplanes assigned to the survey. Picture was given to me by one of the Radio Operators on her. I met the ship in Skagway and went aboard for a cup of Java. We made a day of it by my inviting him to dine on the SS Queen (WGX) on which I was assigned. I do not recall the the purpose of the survey. Perhaps one of our members was R/O aboard the Gannet on this cruise and can furnish more information on the Survey? I would be interested in hearing.

Larry Burrow [LB] 3383-P

that connected the receiver and transmitter to the antenna and had to throw each time you wanted to send or receive. The antenna was disconnected. Of course it was the last place I looked. By this time we were out of Nome about an hour, but we had hit a 40 mph headwind. Our crate wouldn't make more than 100 at the best, with no headwind. It generally was a 3 hour flight. We got to the Yukon river over Nulato just at dusk. We could not tell where the horizon was or if it was safe to land. We circled and the Indians cut some spruce trees and laid out the course on the river, then put 4 fifty gallon drums with some kerosene and rags in, 2 at each end and lighted a match to them. We got down OK. It was 49 below. We had to put the plane away for the night which meant draining the oil while it was still hot, into cans and lugging it up to the roadhouse or trading post. The oil was kept warm behind the big stove, made from two 100 gal. oil drums, welded together with legs and a fire door for cordwood. When we finally got through with our chores and went inside, the trader told us we better do something about our ears, nose and cheeks, as they were frost bitten. They filled a washtub with snow and had us put it on our cheeks. Then we took off our mukluks and both Emmerson and myself found our feet were white, half way to the knees. We stuck them in the snow, also. Years later we found that was not the proper way to treat them. I still have trouble with cold feet. For a week or two afterward, we had tender noses, ears, cheeks and feet, peeling and swollen. No fun.

Fogbound and 52° below

After supper, we sat around the big stove telling stories or in my case, just being a good listener. We went to bed about 10 PM. The next morning when we got up it was 52 below and foggy. The fog did not lift, so we were fogbound for that day. That evening, before supper, we were informed by the trader that the Indians were going to give a dance in our honor. Any new faces or visitors in the winter up there, was all that was needed to have a dance or entertainment of some kind. After supper, several of the young Indian men came over to the trading post to take us to the dance, at their Big House.

Yukon Fun—No Sun !

The building was made of logs with a large vent at the top to let the wood smoke out. It was just one large room. In the middle of the room, was a depressed area about 10 feet across, covered at the bottom with sand, with a fire burning on it. The main floor was several feet higher than the fire area. Around the sides of the building, about 4 feet above the floor, was the sleeping area. It was about six feet wide and covered with all kinds of animal skins to sit on or stretch out and watch the dancing. In my case, I would liked to have laid down and rest my aching feet, but duty called, HI. It was real comfortable inside, even with temperature of 50 below outside. There were probably 40 to 50 people there. The Yukon river Indians (Athabaskan) are different than the eskimos in build and temperament. Of course, their dress was quite different. There was only 5 of us whites, Jerry, Emmerson, myself, the local ACS radio operator and the trader.

The musicians were three young indian men, one played the piano, one a fiddle and one either a banjo or guitar. They had been taught to play at the local mission which was catholic. They were good and I have heard other Indians and Eskimos play and they all seem to have a good ear and rhythm for music.

Dancing in our Mukluks

The dances were the same as anywhere of that time, waltzes, fox-trots, schottische, etc. My speed, "a slow waltz with my aching feet. The big differences, were when the music was being played and the dancers on the floor, there was absolutely no talking. The only noise was the swishing sound of the moosehide moccasins on the floor and the sound of music. I don't believe I have ever danced with any group there your partners were so light on their feet. If there was nay drinking, you could not notice it. For refreshment, we had hot coffee with smoked or dried salmon, meats of several kinds, moose and I believe some bear. It was very good. We were given a wonderful time. The next day was foggy also, so did not get away until the third day. The trip back was uneventful. Of course the heating up of the planes engine for several hours by a gas heater inside the nose hanger (a plain canvas tarp hung over the engine) before we rushed the warmed up oil that was kept in the trading post, to the plane. If the engine did not start within 15 or 20 minutes, you might as well forget it for that day and start over again the next.

Emmerson and myself missed the big New Years dance in Nome. Our toes were still too swollen to get shoes on and they hurt too much to do any dancing. The following New Year we made up for it. Hi.

Anyway, it was worth it as it was quite an experience from the ordinary daily grind.

73 Larry Burrow - 3383-P
-73-

Wedding Bells Alaska Style

Marriage - with help from Radio and N.A.T.

While in Nome early in 1933, probably February, I met the new school marm that had arrived by plane in December of 32. The school needed another teacher.

She lived in Ketchikan and had been appointed to the job by the Commission of Education for the territorial schools. She took ship from Ketchikan to Valdez. Then by plane to Anchorage, then to Fairbanks.

They then took off for Nome. They were about half way when they had to sit down on the Yukon at Koyukuk Station where they were weatherbound for 5 days. It was just a trading post but they were treated royally.

Anyway the YL and I hit it off all spring and into the summer. All of a sudden I received orders to proceed by air to Candle (WKN) and relieve the operator there. He was to come to Nome to be the new OIC. So on Aug. 6 1933 I had to say goodby to Aileen. The plane that took me to Candle took the Ex-Candle operator back. This was with NAT (Northern Air Transport). Only 40 people in town and all miners. No young people. I got lonesome for Aileen and one day got on the circuit to Nome and ask the new OIC if he would have Aileen come up to the station as I wanted to ask her something. That afternoon she was there. So in CW I asked him to ask the YL if she would come up. Her answer ..." under what conditions and intentions ?" My reply, "Marriage, there is no preacher or church here, no doctor or nurse but the U.S. Commissioner for the Territory of Alaska and also the U.S. Postmaster can marry us."

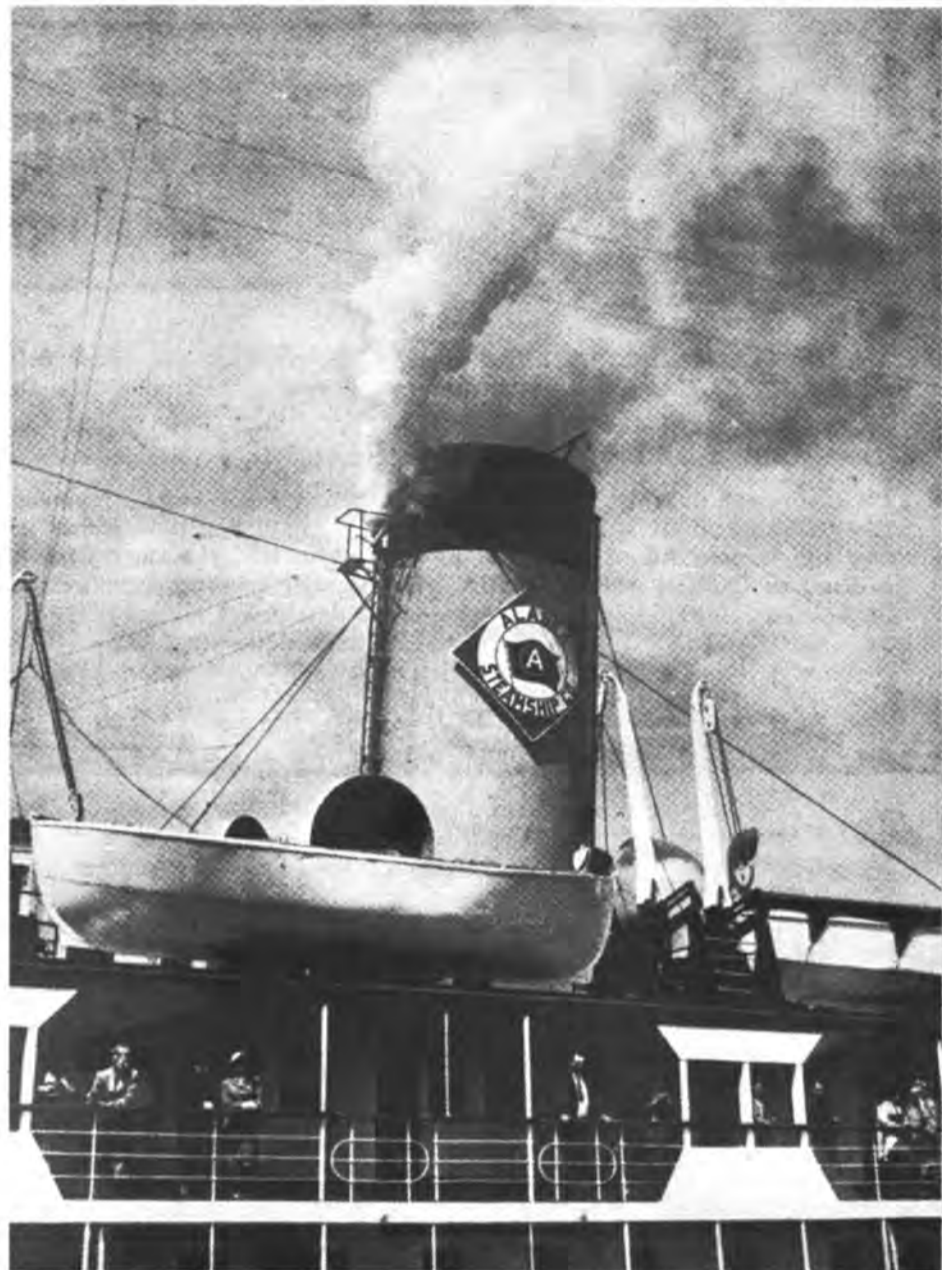
She had the operator tell me she would let me know the next day. The next day was "Yes" will be up on the next NAT Plane. Five days later she arrived. We were married that evening and well shivered ! When I did not receive a bill for Aileens transportation I wrote to them at Nome to send me the bill. The next week in the mail was the bill marked across the \$100 fare... "Paid in Full" with compliments of the NAT and pilots for the many favors and extra schedules you made for us". Now that is what makes the world go round.

73 Larry Burrow.

PS: On Sept. 3 1983 we observed our Golden Wedding Anniversary.



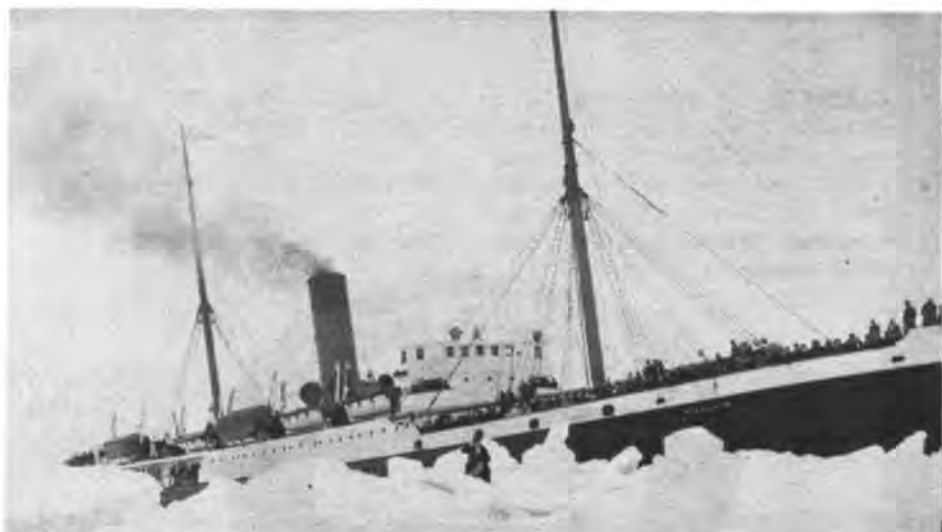
"Larry" Burrow - on Watch on the S.S. Queen - WGCP 1929. Early Radio call of the Queen was "WGX". Many of our members have sailed on the Queen over nearly two decades of service on the Pacific Coast and to Alaska. She was built in 1882. Larry said he had a set of honey-comb coils to copy "Px" but they do not show.



"SAILING DAY" - ALASKA BOUND



S.S. QUEEN
WGCR



SS. VICTORIA - WAD
Caught in the ice in the Bering Sea. Picture taken June 11 1926 at 10AM. Pacific Coast SS Co.

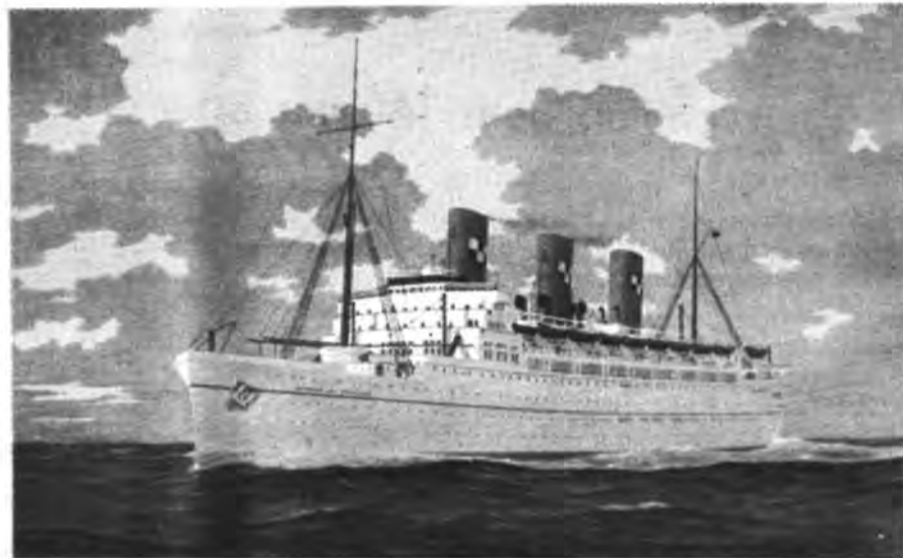
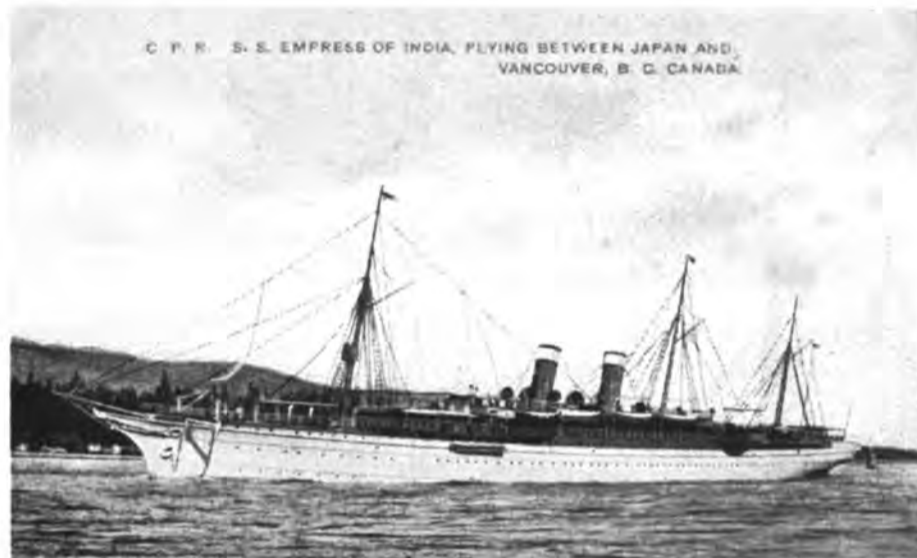
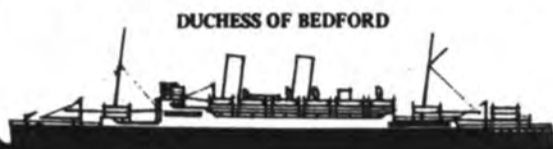
Canadian Pacific Steamships

BY DON THOMAS 1340 SGP

THE CANADIAN PACIFIC LINE, whose ships were always under British registry, started Trans-Pacific service in 1887. However, it was not until 1903 that Trans-Atlantic service was started, when the Beaver Line was bought from Elder Dempster & Co.

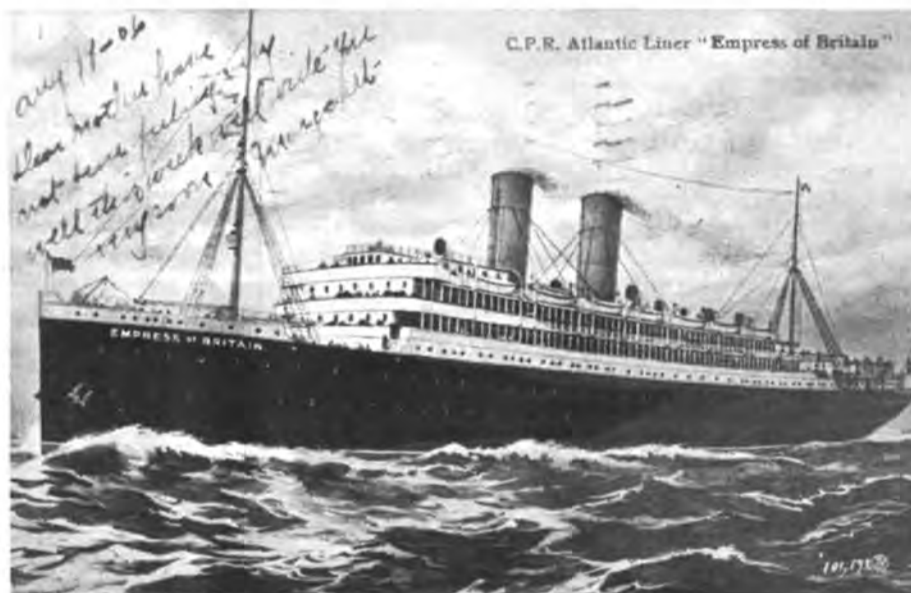
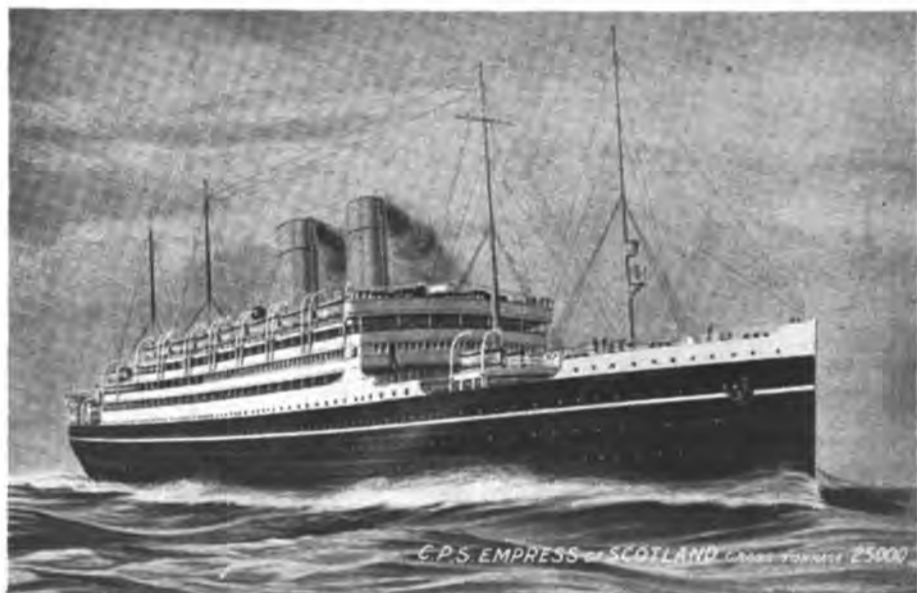
The Empress of India, Empress of China, and Empress of Japan, which sailed around the turn of the century for many years, looked like yachts, with beautiful lines and clipper bows. They were used on the Trans Pacific routes.

On the North Atlantic, the big two-stack and three-stack steamers were used, starting a few years later. As an example, the first EMPRESS OF BRITAIN, of 14,189 tons, served in World War I as an auxiliary cruiser. The second EMPRESS OF BRITAIN, 42,348 tons, was the largest Allied liner lost in World War II. The third EMPRESS OF BRITAIN, 25,500 tons, was eventually sold to the Greeks and cruised as QUEEN ANNA MARIA. She is still cruising, now as the CARNIVALE on cruises from Florida.



EMPRESS OF INDIA - (MPI) (1889-1923) 5,943 - 455x51 17k. In the Vancouver-Hong Kong trade until sold to Maharaja of Gwalior and renamed LOYALTY. Scrapped 1923. Sister ships EMPRESS OF JAPAN & EMPRESS OF CHINA.

EMPRESS OF SCOTLAND - (1905-1934) 25,160 677x77 18k. Built as KAISERIN AUGUSTE VICTORIA. Ceded to Great Britain by Germany after WW I. Served in Cunard Line for a while, then renamed in 1921 as EMPRESS OF SCOTLAND. Sailed in service to Montreal from Great Britain. Scrapped 1934.



EMPRESS OF SCOTLAND - (GMLV) (1930-1967) 26,213 - 644x83 21k. Built as the EMPRESS OF JAPAN. Made speed record Yokohama to Vancouver. Renamed EMPRESS OF SCOTLAND and used in war service. Started Trans-Atlantic run in 1950 to Quebec from Liverpool. Sold 1958 to Hamburg-American Line and renamed HANSEATIC. Damaged by fire in 1966 and later scrapped.

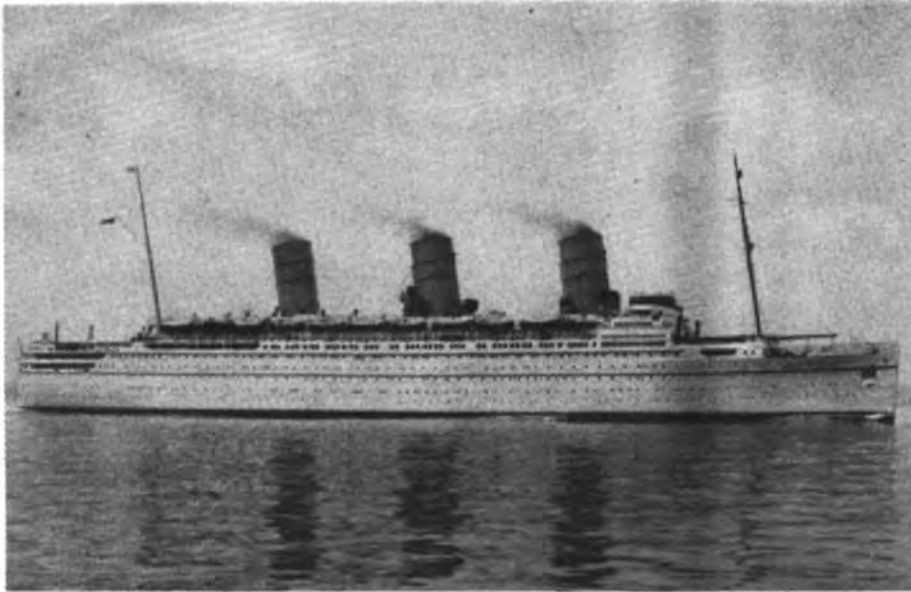
EMPRESS OF BRITAIN - (MPB) (1906-1930) 14,189 548x65 20k. First "Empress" in Atlantic service. On Liverpool-Canada run. Auxiliary cruiser in World War I. In 1924 renamed MONTROYAL. Sold to Norwegian shipbreakers in 1930. Sister ship EMPRESS OF IRELAND.



Baggage

Labels

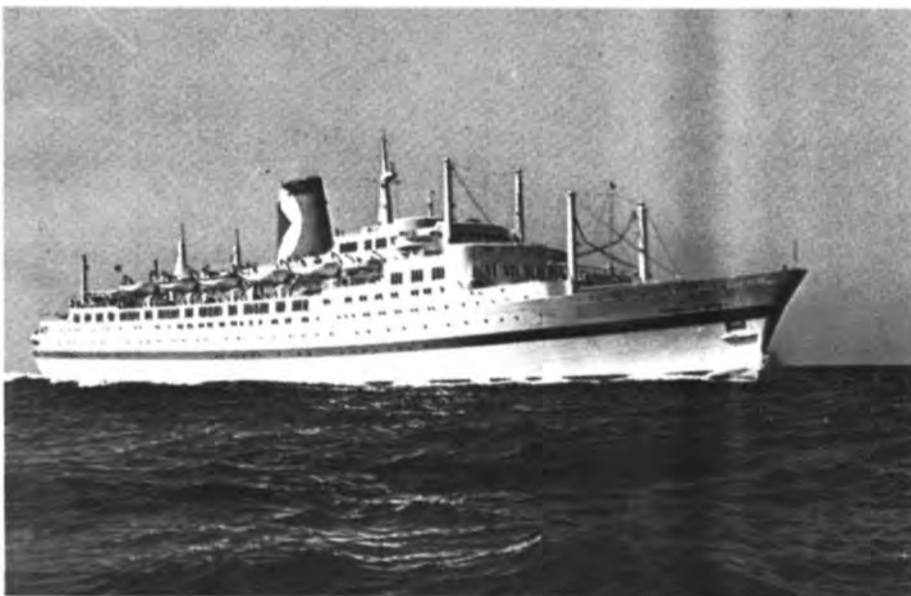




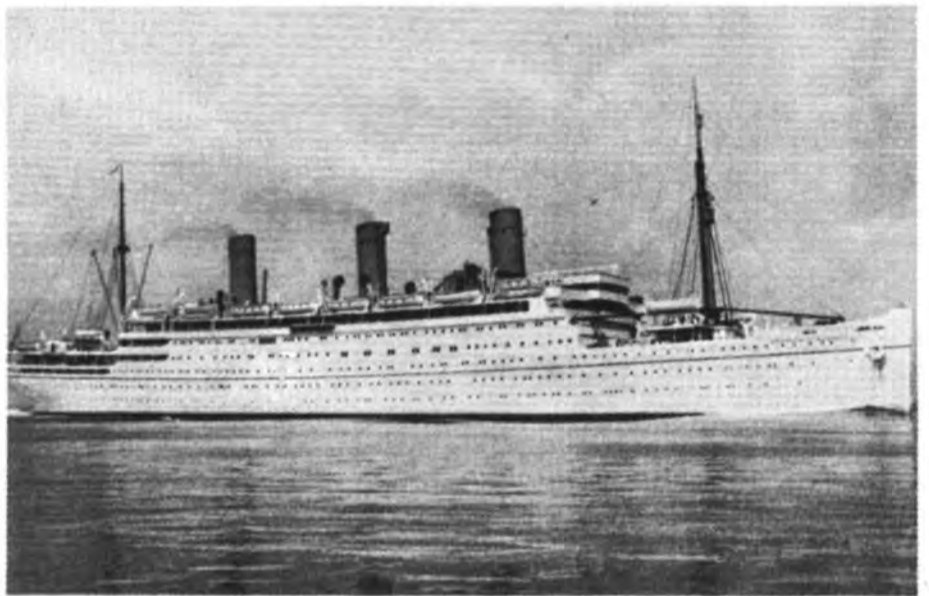
EMPRESS OF BRITAIN - (1931-1940) 42,348 733x97 24k. In North Atlantic Canadian service from Britain, and sometimes cruising. Bombed by German aircraft and sunk by submarine, 1940.



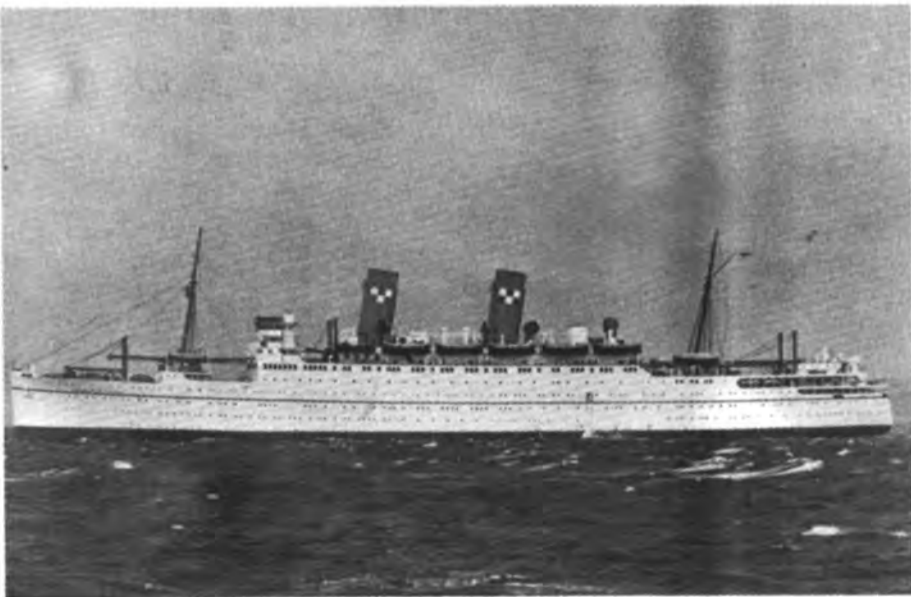
EMPRESS OF BRITAIN - (1955-) 25,500 600x85 20k. Sailed in Canadian service until 1964 when sold to Greek Line and renamed QUEEN ANNA MARIA. In 1976 renamed CARNIVALE and registered in Panama. Still sailing as cruise ship for Carnival Cruise Lines out of Miami.



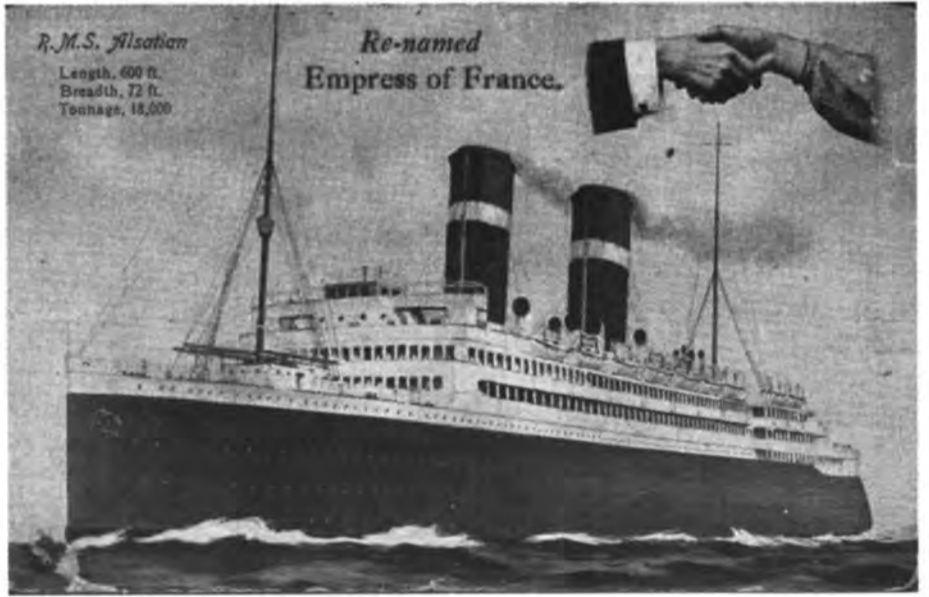
EMPRESS OF CANADA - (GHLA) (1960-) 27,500 650x86 21k. In North Atlantic trade until 1972 when sold to Carnival Cruise Lines and renamed MARDI GRAS. Now under Liberian flag.



EMPRESS OF AUSTRALIA - (VLJY) - (1914-1952) 21,833 588x75 19k. Built as the TIRPITZ. Ceded to Great Britain in 1919, sold to Canadian Pacific in 1922. Re-named EMPRESS OF CHINA, and then EMPRESS OF AUSTRALIA. Vancouver-Hong Kong service 1922-1926, then in 1927 Canadian service from Great Britain. Scrapped 1952.



EMPRESS OF FRANCE - (1913-1935) 18,357 571x72 19½k. Laid down as ALSATIAN for Allan Line. Bought by Canadian Pacific in 1917, and ran to Quebec from Liverpool. World cruise from N.Y. in 1923. In 1928 placed in Pacific service for a year, then back to the Southampton-Quebec run until 1931. Laid up, until scrapped in 1935

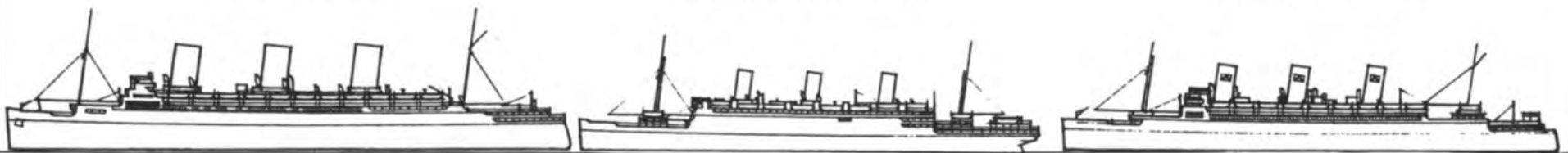


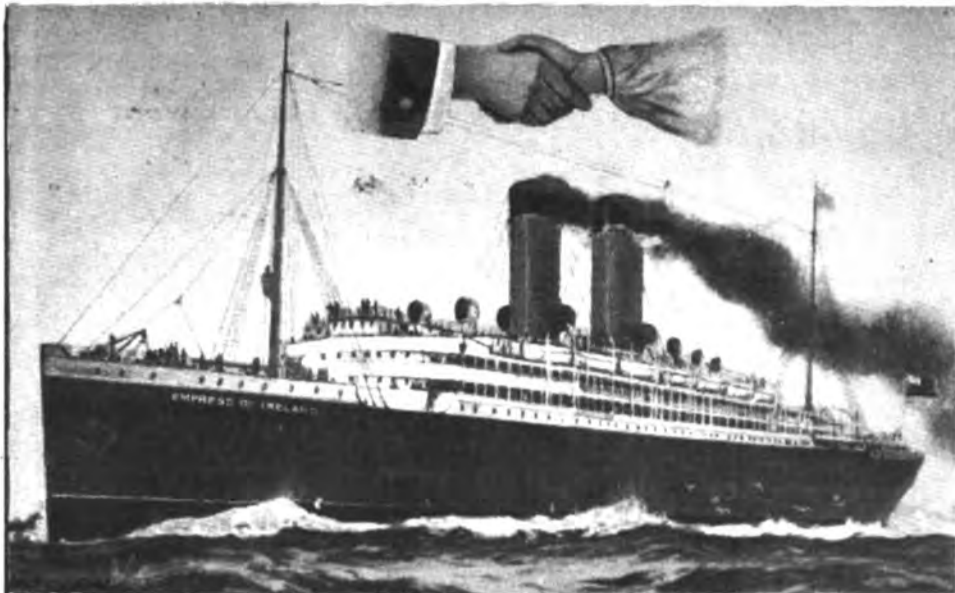
EMPRESS OF FRANCE - (1928-1961) 20,448 581x75 18k. Built as the DUCHESS OF BEDFORD. Renamed EMPRESS OF FRANCE in 1948 after war service; and resumed Liverpool-Quebec-Montreal service. Scrapped in 1961.

EMPRESS OF BRITAIN (II)

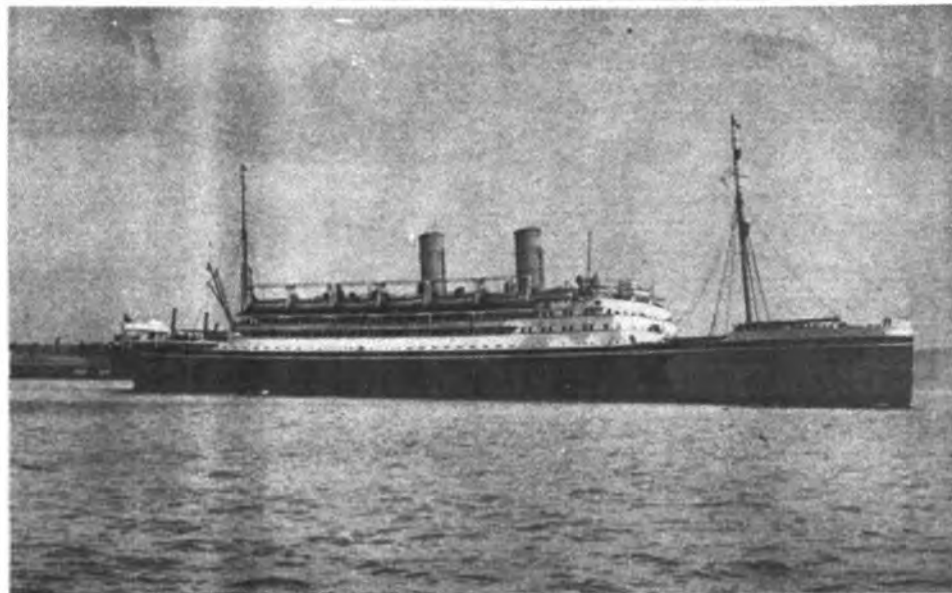
EMPRESS OF AUSTRALIA (I)

EMPRESS OF SCOTLAND (II)

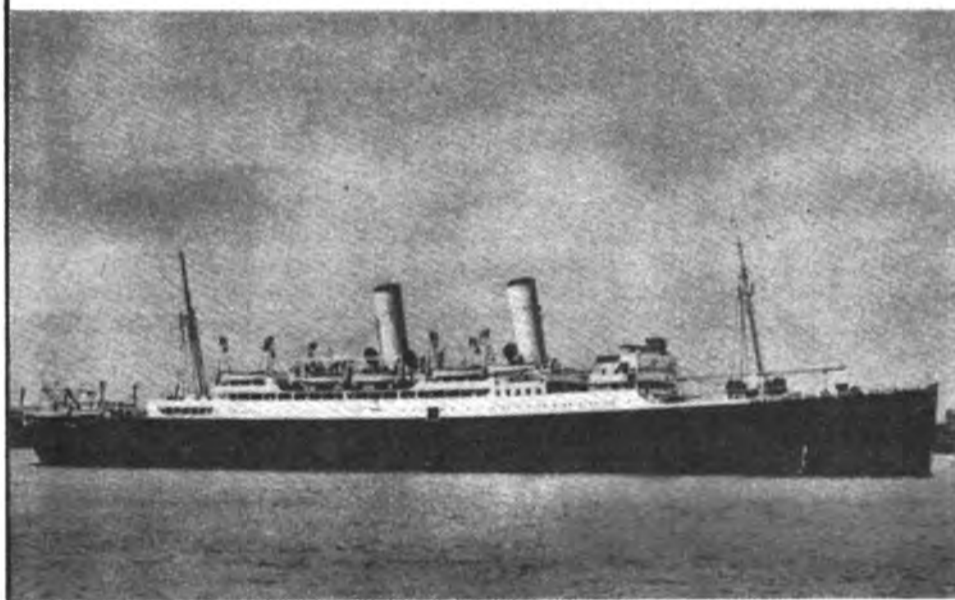




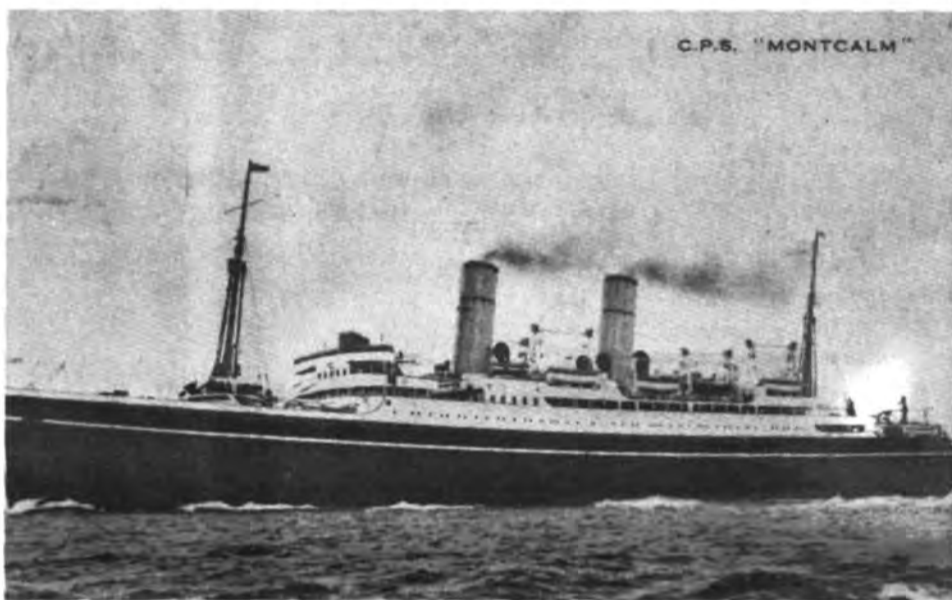
EMPRESS OF IRELAND - (1906-1914) 14,191 548x65 19k. In Canadian service from Liverpool. Collided in fog in St. Lawrence river in 1914 and sunk with loss of over 1,000 lives. Sister ship **EMPRESS OF BRITAIN** (1906).



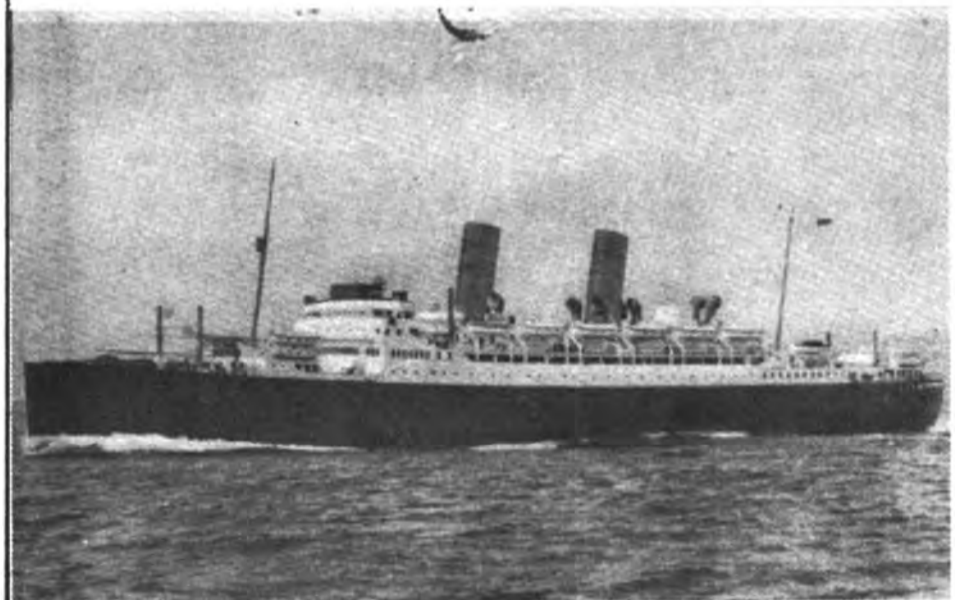
MONTROYAL - (1906-1930) 15,646 548x65 18k. Built as **EMPRESS OF BRITAIN** and re-named **MONTROYAL** in 1924. Sailed from Liverpool to Quebec and Montreal, and later from Southampton, Antwerp, Cherbourg to Quebec. Sold in 1930 to Norwegian shipbreakers.



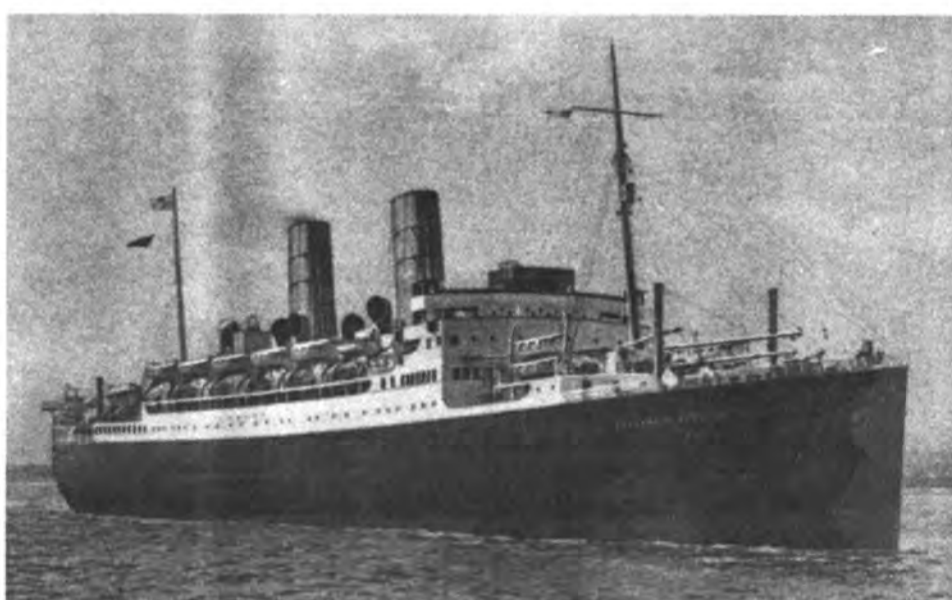
MONTCLARE - (1922-1958) 16,314 17k. On Liverpool-Montreal run. Was an armed merchant cruiser in World War II. Converted to a submarine tender in 1946. Scrapped 1958. Sister ships **MONTCALM** and **MONTROSE**.



MONTCALM - (1921-1952) 16,418 549x70 17k. In Liverpool-Canada trade. In 1939 re-named **WOLFE** and became British armed merchant cruiser, later converted to depotship and scrapped in 1952. Sister ships **MONTCLARE** and **MONTROSE**.



DUCHESS OF BEDFORD - (1928-1961) 20,123 581x75 18k. On Montreal run from Liverpool until renamed **EMPRESS OF FRANCE** in 1948. Scrapped in 1961.



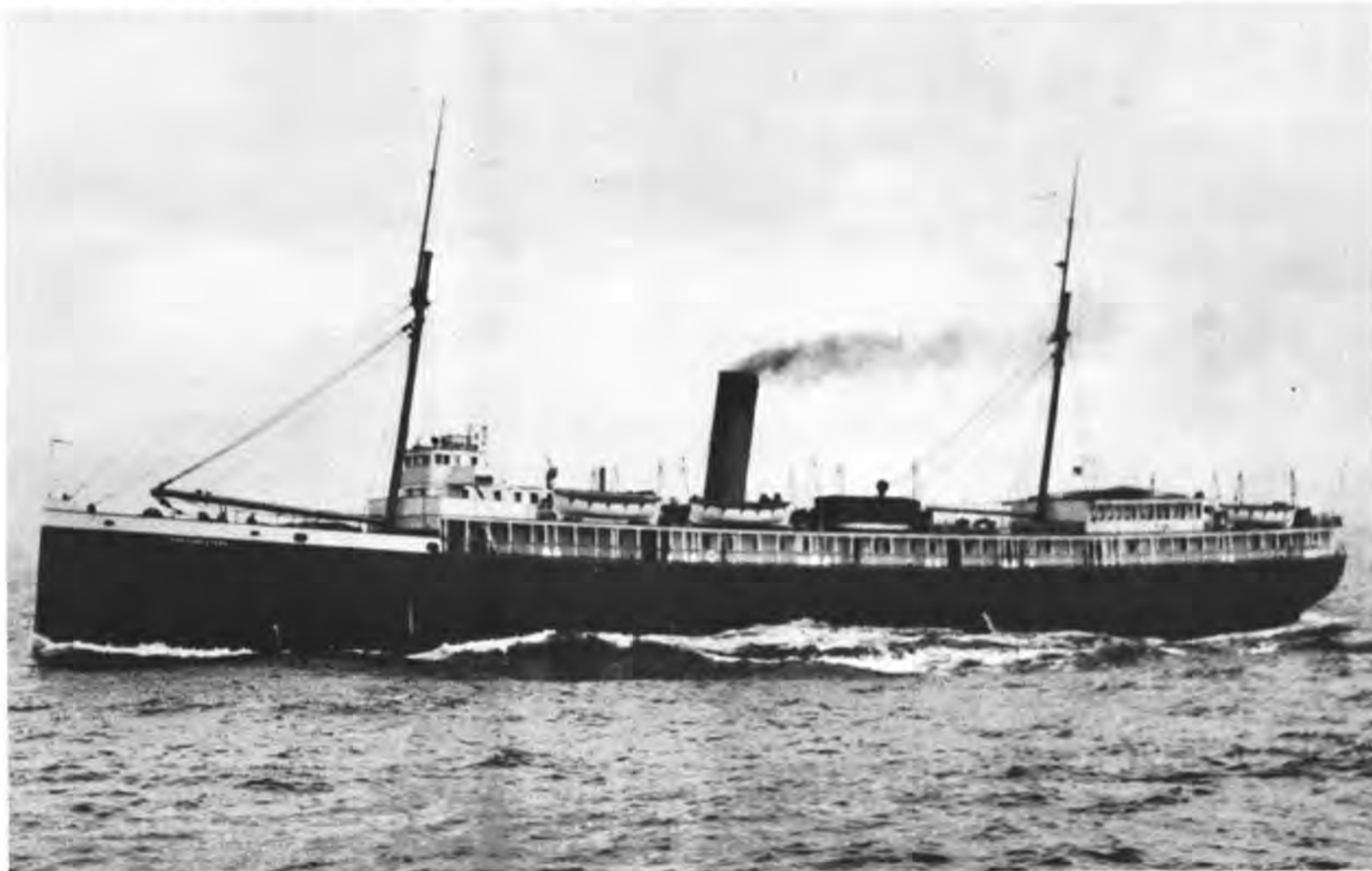
DUCHESS OF ATHOLL - (1928-1942) 20,119 581x75 18k. On Great Britain-Canada run until World War II. Torpedoed and sunk in South Atlantic, 1942.

Other **EMPRESS** liners not pictured include the **EMPRESS OF JAPAN** - (MPJ) (1890), **EMPRESS OF CHINA** (1890), **EMPRESS OF JAPAN** (1930), **EMPRESS OF CHINA** (1914), **EMPRESS OF ASIA** (1913) (GKR), **EMPRESS OF INDIA** (1908), **EMPRESS OF AUSTRALIA** (1924), **EMPRESS OF CANADA** (1922), **EMPRESS OF CANADA** (1928), **EMPRESS OF ENGLAND** (1957), and **EMPRESS OF RUSSIA** (MRD) (1913). I am still looking for postcards of these ships.

After World War II all the big liners had been either sunk, scrapped, or sold. Some are still sailing under flags of convenience, renamed Mardi Gras, Carnivale, etc.

The S.S. Northwestern - AN WAN

ONE OF ALASKA'S LEGENDARY PIONEER SHIPS



A Tough Ship in Dangerous Waters

By DEXTER 'S. BARTLETT

TRAVELING to Alaska in the wild blue yonder or bumping along in a station wagon would have been extremely visionary to the gold-seekers of '98. Back then it meant a whole summer's trip of hardship, privation and facing death in many forms, whether by land or sea. Now it can be made in a few days or a few hours. As the forty-niners helped pave the way for settling the West, so the Alaskan sourdoughs paved the way—sometimes in a boisterous, shooting way—to what now is our 49th state.

Although I did not come into this Alaskan picture until I started steamboating in 1916 as a radio operator, I can remember some of the wild tales told me by old-time seamen. In the lust for gold, human lives did not count.

Safety at sea was cast out. Anybody with a few dollars could buy a decayed hulk and become a shipping magnate. Some, apparently, did not even need a boat. They just opened a ticket office, collected fares and disappeared by the light of the moon. Sternwheel river boats, totally unfit for the open sea, by superb seamanship made it across the North Pacific for the Yukon River traffic.

Boats were greatly overloaded and freight put in the bunkers instead of coal, therefore, running out of fuel and groceries were common occurrences. Even on what then were "palatial" liners, five passengers were put in 9-by-10 staterooms and, in bad weather, with doors and ports closed and everyone seasick, you can imagine what the conditions were at best, while in the steerage things were beyond description.

THE steamship Northwestern was launched as the Orizaba in 1889, at Chester, Pa. The Alaska Steamship Co. acquired her in 1908 and changed her name. Although not as historic as the Victoria, launched in 1870, or the Dora, launched in 1880, she was home to me for several years.

The Northwestern was a "luxury" liner for those days on the Alaska run, having normal staterooms of only three berths and a steerage that was livable, to say the least. She could carry about 200 passengers with 65 in

the crew.

The only time I ever sent a S O S call was on this ship. In the early morning of December 11, 1927, we were in a heavy snow storm trying to make Seymour Narrows, north of the Strait of Georgia. Seymour Narrows is a narrow, dangerous passage with extremely strong tide rips. Instead we landed on the beach a few miles east of the entrance. We took the matter as a joke, as there was no wind and the old-time navigators planned on backing off at high tide.

HOWEVER, in a few hours things took on a tragic look. Although the Gulf of Georgia rarely gets rough, fate willed that an unusually severe southeast gale came up suddenly. Shortly, seas had broached the ship broadside on the beach and were breaking completely over us.

Immediately, every one started thinking of the Princess Sophia, which had sunk a few years before in Lynn Canal with 398 lives lost. This had occurred under similar conditions, so soundings were taken quickly. They

Sourdoughs used to say in Alaskan ports that the Northwestern had hit every rock in the Inland Passage, but she survived all troubles—including a bombing by the Japanese in 1942, while she was helplessly beached at Dutch Harbor.

showed a solid, gravelly beach, eliminating the danger of sinking, but there still was the immediate danger of the ship breaking up due to the heavy seas.

The only nearby ship we were able to contact was a Canadian lighthouse tender. Although boat launching in rough seas was routine for those experienced seamen, these were too rough for them. Abandoning this angle, we got the Vancouver marine radio to contact Campbell River in an attempt to have a large fishing boat sent out. However, they were unable to accomplish this, due to the land lines being blown down by the storm.

In the midst of the harrowing, sea-smashing turmoil, fate, as it often does, did an about-face. The halibut fishing boat, Explorer, luckily had missed the Narrows, as we had, and again, luckily, heard our ship's bell. With the boilers flooded there was no whistle, although we did have a gasoline engine to power our radio. Risking their lives in a brilliant and dangerous maneuver, the men of the Explorer dashed through the breakers under our stern and came around on our lee side, where our passengers could get down into their fish hold.

Then they battened down the hatch and took off. With 107 passengers in the small dark hold, smelling of fish and being thrown around in heavy seas, it was a nightmarish experience for them, but they were safe, at least.

WE, of course, had to stick it out for another three hours, until the return of the Explorer from Campbell River, where she had discharged our passengers. But fate was on our side again with the gale rapidly subsiding.

Therefore, we elected to stay with the ship as she could not sink and there was little danger of another gale. The next day the S. S. Alameda came and took us off. As we left the North-

western we could see all the expensive Christmas goods floating around in her hold, ruined by sea water.

The passengers and crew had behaved marvelously, with the usual exception of one member, who couldn't take it and got drunk. Capt. John (Jock) Livingstone was magnificent. Although normally a nervous individual, he was the calmest of all during the emergency.

A few trips before, I had bought an expensive camera, which provoked derogatory comments about my being a spendthrift. However, I had the only camera available and when things quieted down, I took a few pictures and sold them to the press for more than the cost of the camera.

ALASKA, being today's last frontier, should be a promising field for youngsters. The hardy pioneers have taken many of the hardships out of Alaskan living, although a newcomer still will have to scratch for a living and not expect to dig gold in the streets. Alaskans are notorious for being generous, but panhandlers are not welcomed.

Although it is a sad sight to see the last of the virgin wilderness torn up for cities and airports, there is no use trying to stop progress. However, I only wish some of the sourdough's virtues could be retained. They may not have been angels but, if someone was in trouble, they would risk their lives to help. The old-timers may have hunted and fished for food the year around, but game laws were unnecessary as they never wantonly defiled nature.

If a young'un got uppity, there was never a thought of sending him to a reform school; they would just shove him out into the cold without a coat. He then sawed wood or froze. Lastly, it was a heinous crime to lock your door. Can many other localities say the same?

FOOTNOTE - Dexter S. Bartlett, SOWP Historian furnished this copy published in the Seattle Times, Sept. 23, 1962. "Old Bart" was R/O on the Northwestern circa 1917-18. He became a "Silent Key" on Sept. 23 1982. The SS Northwestern is one of "Ye Ed's" memories

as he made his first trip to sea aboard WAN in 1917 before joining the Navy. Jack London, Robert Service and others made "Alaska and the Youkon" top priority on this 'kid's' must-see list. I didn't see the Yukon but Alaska and ships intrigued me - still do!



The Kalamazoo

By L. M. PERKS

To all you old timers who still have the "SPARK !"
It is not quite clear whether this poem recalls reality that comes only when one is at the very brink or going down for the third time, as some say, or just a pleasant figment, part dream.

But... I swear that I shall never tell another living soul what I saw that night. Does the name Kalamazoo mean anything to you ?

As told to his grandson

When I was just a tiny lad
Much tinier than you,
I received a Christmas gift --
The good ship KALAMAZOO.

Her hull was smooth and sleek and white,
Her sails were full-rigged, too.
Imaginary trips I took
Upon the ocean blue.

And then one day she shook her head
And sailed straight out to sea.
Where seas meet sky she dipped her sails
A farewell bow to me.

Sail on, sail on, o gallant ship,
Out where the seas are blue.
Sail on, sail on, I sadly waved
To the good ship KALAMAZOO.

Every day I looked for her
Down by the surf and shore,
But though the starfish smiled at me,
I missed her more and more.

The years broke over my shoulders
Like waves from out the sea
And then one night a sailing man
My Grandpa came to see.

They sipped a little toddy
And talked into the night.
They spoke of storms in '93
And of the Northern light.

He spoke in whispering voice to Gramps
As it was nearing dawn.
The words he spoke brought me awake
Inside a sleepy yawn.

The sailor spoke in awed hushed tones
And I hugged tight my knee.
He told about a tiny ship
That sailed on every sea.

"I seen her in the Bengal Bay,
Roaring forties, hull full down;
A tiny ship, fully rigged,
And once off Puget Sound."



USCGC "KICKAPOO" [NRFK]

This picture was taken at the dock in Rockland Maine. The R/O of NRFK (all SOWP Members) included Arthur A. Byron 356-V; Frank M. Stinson 491-P (K000); Walter D. Smith 267-P (W4IJ). The Kickapoo was commissioned in 1919 and condemned for Sea Duty in 1936. She was a coal-burner designed as an 'ice breaker'. Bryon says ..."Not much to look at but a good home".

"Oh, was she smooth and white," I cried
With sails full rigged too?"
"Aye!" his startled eyebrows rose,
"She's called the KALAMAZOO!"

"I saw her sailin' off our bow.
We followed her all night.
She kept us from the jagged shoals
And left us, come daylight.

Aye, I seen 'er, aye, I seen 'er
Out there where seas are blue,
But I'd not tell another soul
I'd seen the KALAMAZOO."

She comes when sailors need her
And leaves when skies are blue.
All sailors bless the tiny sails
Of the good ship KALAMAZOO.

When you go down to the ocean,
Go with a heart that's true.
If you look real hard 'n' long 'n' far
You may see the KALAMAZOO.



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On the light side



**Chopping
Dropping the pilot**

"Under a 12th Century law, it was enacted that a Lodeman (Pilot), if he lost the ship by default, was to be taken to the windlass and there beheaded by the crew, and the crew were not to be answerable to any judge, because the lodeman had committed high treason against his undertaking of pilotage."

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V = Veteran, M = Member, Sparks = Worked at Sea]

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